

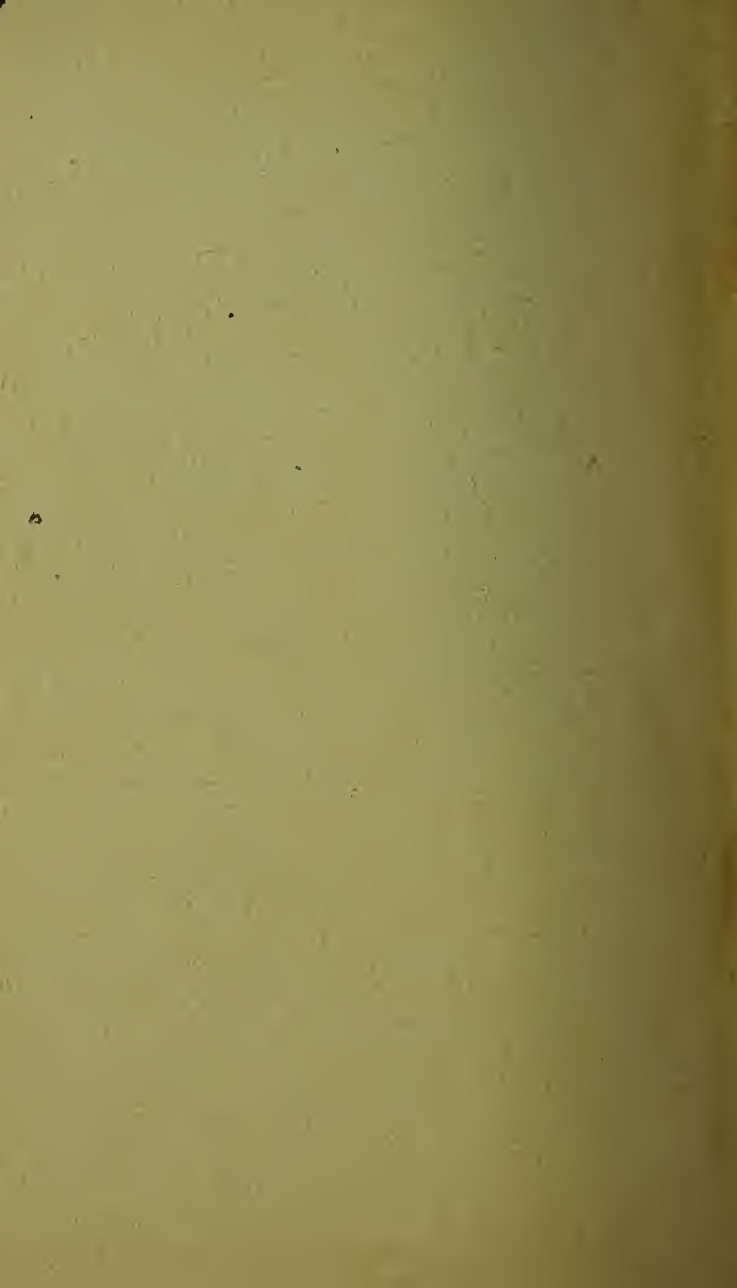
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1893/94

TUE
OF
UNIVERSITY

CATALOGUE
OF
TUFTS COLLEGE.



1893-94.



CATALOGUE
OF
TUFTS COLLEGE



1893-94

BOSTON
H. G. COLLINS, 15 MILTON PLACE
1894

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Calendar.

1893.

- OCT. 5. College year begins, Thursday morning.
OCT. 8. Russell Lecture, Sunday, 3 P. M.
NOV. 1. Limit of time for applying for Scholarships.
DEC. 20. Christmas recess begins, Wednesday evening.

1894.

- JAN. 3. Christmas Recess ends, Wednesday evening.
FEB. 5. Mid-year examination week begins, Monday.
FEB. 10. End of first half-year, Saturday. Plans of study for the second half-year must be reported before noon of this day.
FEB. 12. Second half-year begins, Monday.
MAY 29. Prize Reading in the College of Letters.
JUNE 5. Prize Reading in the Divinity School.
JUNE 15. Class Day, Friday.
JUNE 17. Baccalaureate Sermon, Sunday, 3 P. M.
JUNE 20. Commencement, Wednesday.
-

First Examinations for Admission to College of Letters.

- JUNE 21. Elementary Mathematics, English, and History.
JUNE 22. Latin, Greek, Science, and Advanced (Engineers') Mathematics.
JUNE 23. German and French.

(Examinations begin at 9 A. M. on each day.)

SUMMER VACATION, THIRTEEN WEEKS.

Second Examinations for Admission to College of Letters.

- SEPT. 18. Elementary Mathematics, English, and History.
SEPT. 19. Latin, Greek, Science, and Advanced (Engineers') Mathematics.
SEPT. 20. German and French.

(Examinations begin at 9 A. M. on each day.)

- SEPT. 20. College Year begins, Thursday morning.
Registration of all students at Secretary's office.
Major subjects and plans of study for the first half-year must be reported before noon of this day.
SEPT. 22. Regular College exercises begin.
SEPT. 23. Russell Lecture, Sunday, 3 P. M.
DEC. 19. Christmas Recess begins, Wednesday evening.
-

TUFTS COLLEGE is situated at College Hill, four miles from Boston, on the Lowell division of the Boston & Maine Railroad. The postoffice address is — TUFTS COLLEGE, MASS.

Tufts College.

TUFTS COLLEGE owes its inception immediately to an effort, under the direction of the Rev. OTIS A. SKINNER of Boston, to raise one hundred thousand dollars for its foundation. About sixty thousand dollars was obtained in money. The subscription was completed by SYLVANUS PACKARD giving his bond for twenty thousand dollars, and by CHARLES TUFTS making a donation of twenty acres of land, embracing the present site of the College. The latter announced his intention to increase his gift of land to more than one hundred acres, and thus became the largest benefactor at the start. It was determined, therefore, that the institution should receive his name. Mr. Packard was a Boston merchant, who from the beginning made the College a peculiar care. Dying, he bequeathed to it his entire fortune, this being the largest gift it has yet received from a single person. Among other benefactors deserving mention, associated with those who may be styled the founders of the College, were OLIVER DEAN, who gave it ninety thousand dollars, and THOMAS A. GODDARD, whose gifts, though unobtrusive, were constant, and whose widow has continued the generosity of her husband. Dr. WILLIAM J. WALKER came soon after, with gifts and bequests amounting to nearly three hundred thousand dollars.

The charter under which, with slight changes, the College has been developed was granted April 21, 1852. Students were first formally admitted in 1855. The first class, consisting of three members, was graduated in 1857. At the outset, provision was made only for a course of study leading to the degree of Bachelor of Arts; but some unclassified students were always in attendance. It seemed desirable, therefore, to lay out courses for those who had been prepared only in English subjects. In 1866 the degree of Bachelor of Philosophy was offered to those who should pursue a prescribed course

covering two years. This course continued until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. In 1891 a new course of study, leading to the degree of Bachelor of Arts, was offered for the first time, for which an entrance requirement, believed to be fully the equivalent of the Greek, is demanded in two modern languages. A department of Civil Engineering was organized in 1869, and opportunity was offered for instruction in the branches pertaining to that subject. A course of study in Electrical Engineering was opened to students in 1883, and a professorship of the subject was established in 1890. The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. THOMAS J. SAWYER, D. D., was elected Packard Professor in 1869. This was the beginning of the Divinity School. In 1883 the late PHINEAS T. BARNUM gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natural History, and by his last will he bequeathed forty thousand dollars more. The first President was the Rev. HOSEA BALLOU 2d, D. D., who held office from the opening of the College until his death in 1861. His successor, the Rev. ALONZO AMES MINER, D. D., LL. D., was inaugurated in 1862, and continued in office until his resignation in February, 1875. The present incumbent was chosen in March of the same year.

In the summer of 1892 the College was by vote of the Trustees opened in all its departments to women on the same terms as to men. In the summer of 1893 it was decided to open the Tufts College Medical School. The Bromfield-Pearson school for technical instruction was opened in the fall of 1894 in a thoroughly equipped building, erected for the school from the fund bequeathed by the late HENRY B. PEARSON. Thus the best facilities for practical work were provided for students in the technical courses of the College.

The College Charter.

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary, and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any trustee from the same corporation, when, in their judgment, he shall be rendered incapable, by age, or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SECTION 2. The said corporation shall have full power and authority to determine at what times and places their meetings shall be holden, and the manner of notifying the trustees to convene at such meetings, and also, from time to time to elect a President of said College, and such professors, tutors, instructors, and other officers of the said College, as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the constitution and laws of this Commonwealth, with reasonable penalties for the good government of the said College, and for the regulation of their own body, and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one third, at least, of the trustees are present.

SECTION 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lauds, tenements, or other estate, real or personal; provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.

SECTION 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College, in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts, and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SECTION 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said College, on account of the religious opinions he may entertain.

SECTION 6. The legislature of this Commonwealth may grant any further powers to, or alter, limit, annul, or restrain, any of the powers vested by this act in the said corporation, as shall be found necessary to promote the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SECTION 7. The granting of this Charter shall never be considered as any pledge on the part of the Government, that pecuniary aid shall hereafter be granted to the College.

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JOHN D. W. JOY.
ALONZO A. MINER, D. D., LL. D.
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CHARLES WHITTIER.

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ELMER H. CAPEN.

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NEWTON TALBOT, TREASURER, *ex officio*.

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Professor of Technical Drawing. West Somerville.

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Professor of Chemistry.

*WARREN S. WOODBRIDGE, A. B., B. D., Medford.
Woodbridge Professor of Applied Christianity.

*Absent for the present year.

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Instructor in Chemistry and Physical Training.
- FRANK E. SANBORN, S. B., West Hall, 20.
Walker Special Instructor in Mathematics.
- EDWIN A. START, A. M., Talbot Avenue.
Instructor in History.
- LEO R. LEWIS, A. M., 20 Professors Row.
Instructor in French.
- FRANK T. DANIELS, A. M. B., 32 Summit Avenue,
Instructor in Civil Engineering. W. Somerville.
- HORATIO W. MYRICK, A. M. B., 54 Curtis Street.
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Demonstrator of Physiology.
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Teacher of Woodwork and Foundry Work.

FRANK G. WREN, Dean Hall, 6.
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Medical School.

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Lecturer on Ophthalmology and Otology.

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 164 Newbury Street, Boston.
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CHARLES R. GRAY, Medford.
Superintendent of Buildings.

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HEMAN A. DEARBORN, A. M., Secretary.

Professor of the Latin Language and Literature.

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Instructor in Chemistry and Physical Training.

FRANK E. SANBORN, S. B.

Walker Special Instructor in Mathematics.

EDWIN A. START, A. M.

Instructor in History.

LEO R. LEWIS, A. M.

Instructor in French.

FRANK T. DANIELS, A. M. B.

Instructor in Civil Engineering.

HORATIO W. MYRICK, A. M. B.

Instructor in Electrical Engineering.

STANDING COMMITTEES OF THE FACULTY.

PROMOTIONS: Professor Shipman, *Chairman*; Professors Hooper, Brown, Fay, and Mr. Durkee.

SCHOLARSHIPS AND AIDS: President Capen, *Chairman*; Professors Shipman and Dearborn.

PROGRAM: Mr. Start, *Chairman*; Professors Hooper, Dearborn, Brown, and Mr. Lewis.

CATALOGUE: Mr. Start, *Chairman*; Professors Hooper and Maulsby.

RELIGIOUS SERVICES: President Capen, *Chairman*; Professors Shipman, Bray, Maulsby, and Mr. Sanborn.

MEMBERS ON THE PART OF THE FACULTY OF THE ADVISORY COMMITTEE ON ATHLETICS: Professor Knight (from the Divinity School), *Chairman*; Mr. Durkee and Mr. Start.

GLEE CLUB: Mr. Lewis, *Chairman*; Professor Graves, and Professor Knight (from the Divinity School).

Undergraduates.

COURSES IN LIBERAL ARTS.

Senior Class.

Benton, Herbert Elmon . . .	<i>Annisquam . . .</i>	West Hall, 11.
Goodrich, William Henry . . .	<i>Fitchburg . . .</i>	Θ Δ X House.
Hodgdon, Fred Crosby . . .	<i>Waltham . . .</i>	East Hall, 24.
Leighton, Virgil Louis . . .	<i>W. Falmouth, Me.,</i>	West Hall, 11.
Small, Willard Stanton . . .	<i>Provincetown . . .</i>	West Hall, 4.
Snow, Charles Joseph . . .	<i>Haverhill . . .</i>	Dean Hall, 11.
Stroud, Charles Crawford . . .	<i>N. Grosvenordale, Conn.,</i>	Δ T Δ House.
Wade, Charles St. Clair . . .	<i>West Somerville . . .</i>	East Hall, 24.
Walker, Fred Storer . . .	<i>Westbrook, Me. . .</i>	West Hall, 17.
Webster, Fred Henry . . .	<i>Haverhill . . .</i>	West Hall, 3.
Whittemore, Thomas . . .	<i>Cambridge . . .</i>	Θ Δ X House.
Wren, Frank George . . .	<i>Roslindale . . .</i>	Dean Hall, 6.

Eastwood, James Stewart . . .	<i>W. Brattleboro, Vt.,</i>	West Hall, 17.
Hicks, Blanchard Fossett . . .	<i>Rockland, Me. . .</i>	West Hall, 14.

Junior Class.

Averell, Eugene	<i>Lynn</i>	Dean Hall, 1.
Barney, Charles Neal . . .	<i>Lynn</i>	West Hall, 22.
Chessmore, Frank Harding .	<i>Jonesville, Vt. . .</i>	West Hall, 12.
Clark, Charles Dow . . .	<i>St. Albans, Vt. . .</i>	West Hall, 7.
Clarke, Edward Perkins . . .	<i>Mystic, Conn. . . .</i>	Mid. Hall, 11.
Craig, Edward Channing . .	<i>Franklin</i>	West Hall, 21.
Dunham, William Roger . . .	<i>Barre, Vt.</i>	West Hall, 12.
Eaton, Clarence Livingstone,	<i>Worcester</i>	West Hall, 2.
Fobes, Harold Bartlett . . .	<i>Portland, Me. . . .</i>	West Hall, 6.
Folsom, Harry Charles . . .	<i>Oakland, Me. . . .</i>	West Hall, 6.
Frank, Henry Pennell . . .	<i>Portland, Me. . . .</i>	Θ Δ X House.
Ireland, George Preston . . .	<i>Springfield</i>	East Hall, 22.
Lynde, Frank Martin . . .	<i>Williamstown, Vt.</i>	West Hall, 19.
Nason, Daniel White . . .	<i>Bangor, Me.</i>	102 Curtis St.
Ricketts, Charles Lucius . .	<i>Monson</i>	West Hall, 22.
Saunders, Joseph Henry . . .	<i>Everett</i>	Dean Hall, 2.

Sheldon, James Fitts . . .	<i>Haverhill</i> . . .	West Hall, 8.
Smith, Robert Baxter . . .	<i>No. Tunbridge, Vt.</i>	West Hall, 4.
Thompson, Fred Everett . . .	<i>Bangor, Me.</i> . . .	West Hall, 1.
Whitehorne, William Risby . . .	<i>W. Somerville</i> . . .	East Hall, 22.
Winslow, Guy Monroe . . .	<i>W. Somerville</i> . . .	Mid. Hall, 11.

King, Charles Guy . . .	<i>Mattapan</i> . . .	East Hall, 28.
Larrabee, Frank Philip . . .	<i>Portland, Me.</i> . . .	West Hall, 1.

Sophomore Class.

Austin, Philip Anthony . . .	<i>Barre, Vt.</i> . . .	West Hall, 24.
Bailey, Mabel Prescott . . .	<i>Methuen</i> . . .	36 Lawrence St.
Barnard, Percival Gates . . .	<i>Lowell</i> . . .	West Hall, 29.
Belcher, Walter Hermon . . .	<i>W. Medford</i> . . .	East Hall, 16.
Cheever, Ralph Holbrook . . .	<i>Portsmouth, N. H.</i>	Mid. Hall, 10.
Congdon, Joseph . . .	<i>Clarendon, Vt.</i> . . .	East Hall, 25.
Corridan, Eugene Francis . . .	<i>Weymouth</i> . . .	Dean Hall, 13.
Dillon, David Francis . . .	<i>Palmer</i> . . .	Dean Hall, 13.
Fickett, Edward Wyman . . .	<i>Spencer</i> . . .	East Hall, 30.
Hall, Clifford Foster . . .	<i>Nashua, N. H.</i> . . .	West Hall, 16½.
Hayes, Ethel Munroe . . .	<i>Somerville</i> . . .	252 Medford St.
Hill, Blanche Harwood . . .	<i>Medford</i> . . .	Main St.
Holbrook, Henry William . . .	<i>Palmer</i> . . .	West Hall, 24.
Johnson, Sidney Breed . . .	<i>Lynn</i> . . .	Δ T Δ House.
Jordan, Charles Gilbert . . .	<i>E. Braintree</i> . . .	West Hall, 28.
Lewis, Orlando Faulkland . . .	<i>S. Boston</i> . . .	20 Professors Row.
Lincoln, Joseph Gardner . . .	<i>Ware</i> . . .	East Hall, 19.
Lowell, Charles Sumner . . .	<i>Rockland</i> . . .	East Hall, 25.
Maguire, George Francis . . .	<i>Rockland</i> . . .	Δ T Ω House.
Marvin, Reigold Kent . . .	<i>Roxbury</i> . . .	West Hall, 25.
McLaine, William Ernest . . .	<i>Haverhill</i> . . .	East Hall, 30.
Meacom, Gertrude Holbrooke, . . .	<i>Chelsea</i> . . .	278 Chestnut St., Chelsea.
O'Neil, William Roe . . .	<i>Attleboro</i> . . .	East Hall, 18.
Page, Cecil Alonzo . . .	<i>Lowell</i> . . .	East Hall, 29.
Sampson, Edwin Russell . . .	<i>N. Weymouth</i> . . .	West Hall, 2.
Small, William Morton . . .	<i>Baldwinville</i> . . .	54 Curtis St.
Smith, Orren Henry . . .	<i>Williamstown, Vt.,</i>	West Hall, 12.
Stevens, Edwin Bicknell . . .	<i>Auburn, Me.</i> . . .	Mr. Start's.
Stover, Josiah Albert . . .	<i>Kittery, Me.</i> . . .	Dean Hall, 4.
Whitaker, Henry Charles . . .	<i>Richmond, Vt.</i> . . .	⊙ Δ X House.
Goddard, Mary Frances . . .	<i>W. Somerville</i> . . .	46 Newbury St.
Polk, Cora Alma . . .	<i>Towanda, Pa.</i> . . .	34 Newbury St.

Freshman Class.

Bennett, Rose	<i>Canton Point, Me.</i>	117 Winthrop St.
Blanchard, Lem Gale . . .	<i>So. Barre, Vt.</i>	West Hall, 15.
Brown, Helen Elizabeth . .	<i>Waltham . . .</i>	46 Russell St.
Burleigh, Winthrop Ridgely,	<i>Deering, Me. . .</i>	65 Curtis St.
Butterfield, John McArthur,	<i>Revere</i>	East Hall, 20.
Day, John Boynton Wilson,	<i>Charlestown . .</i>	West Hall, 32.
Dyer, Florence Gertrude . .	<i>Medford</i>	84 Salem St.
Fickett, Mary Grace	<i>Spencer</i>	28 Professors Row.
Gale, Frank Randall	<i>Barre, Vt. . . .</i>	West Hall, 15.
Gardner, Lucie Marion . . .	<i>Salem</i>	4 Lynde St.
Hewitt, Ernest John	<i>So. Royalton, Vt.,</i>	West Hall, 15.
Hodgdon, Georgia Louise . .	<i>Waltham</i>	17 Central St.
Hodge, Edith Louise	<i>Franklin</i>	5 Mt. Pleasant Ave.
Hodgman, Arthur Amos . . .	<i>E. Somerville . .</i>	8 New Cross St.
Knowlton, John Wellington	<i>New Bedford . .</i>	⊙ 4 X House.
Lane, Grace Harvey	<i>Medford</i>	66 Brooks St.
Litchfield, Nathaniel Hale .	<i>Boston</i>	Dean Hall, 12.
McDonough, Margaret	<i>Woburn</i>	51 Winn St.
Morris, George William . . .	<i>E. Somerville . .</i>	40 Glen St.
Parks, Warren Stone	<i>Hudson</i>	Dean Hall, 14.
Perry, Carlton Albert . . .	<i>Fort Plain, N. Y.,</i>	East Hall, 7.
Peterson, Carrie Downing . .	<i>Weymouth</i>	117 Winthrop St.
Prior, Charles Frank	<i>Ludlow, Vt. . . .</i>	211 Holland St.
Russell, Winnie Warren . . .	<i>Woburn</i>	85 Montvale Ave.
Sanderson, George Charles . .	<i>Chelsea</i>	East Hall, 20.
Sanford, Rollin Brewster . .	<i>Albany, N. Y.. .</i>	East Hall, 7.
Shipman, Albert Eaton . . .	<i>College Hill . . .</i>	80 Professors Row.
Sibley, Carrie Hunter	<i>Spencer</i>	28 Professors Row.
Smith, Payson	<i>Portland, Me. . .</i>	Dean Hall, 8.
Start, Alaric Bertrand	<i>College Hill . . .</i>	Mr. Start's.
Sturtevant, Olive Kilburn . .	<i>Stoneham</i>	33 Gould St.
Wheeler, Alfred Winslow . . .	<i>Oakland, Me. . .</i>	Dean Hall, 8.
White, Winthrop Warner . . .	<i>Medford</i>	East Hall, 8.
Williams, Franklin Bates . . .	<i>Roxbury</i>	Dean Hall, 7.

Davis, Horace Amos	<i>Dorchester</i>	Dean Hall, 7.
Robinson, Albert DeMerritt,	<i>Windham, Me. . .</i>	Dean Hall, 9.

ENGINEERING COURSES.

Senior Class.

Byrne, Edward Patrick . . .	<i>Medford</i> . . .	15 Stearns Ave.
Hathaway, Carl Voltaire . . .	<i>South Cabot, Vt.</i> . .	West Hall, 14.
Hersey, Isaac Burrill . . .	<i>Hingham</i> . . .	West Hall, 19.
McDavitt, John Olin . . .	<i>Lawrence</i> . . .	West Hall, 9.
Mallett, John Purington . . .	<i>Topsham, Me.</i> . .	East Hall, 9.
Morrison, Adelbert Harland . . .	<i>Lawrence</i> . . .	West Hall, 9.
Morse, Robert Henry . . .	<i>West Somerville</i> . .	West Hall, 14.
Pember, Frederick Howard . . .	<i>Peabody</i> . . .	East Hall, 9.
Read, Rufus Curtis . . .	<i>Attleboro</i> . . .	West Hall, 23.
Spalding, Samuel Albert . . .	<i>Danvers</i> . . .	West Hall, 23.
Whitney, Orville Jophanus . . .	<i>Medford</i> . . .	West Hall, 9.
Wills, Albert Potter . . .	<i>Waltham</i> . . .	West Hall, 26.
Wright, Edwin Hanscom . . .	<i>Charlestown</i> . . .	West Hall, 26.

Junior Class.

Foss, Hubert Collamore . . .	<i>Bangor, Me.</i> . .	Dean Hall, 6.
George, Arthur Lincoln . . .	<i>Lebanon, N. H.</i> . .	Dean Hall, 5.
Page, Charles Harrison . . .	<i>Lowell</i> . . .	East Hall, 19.

Sophomore Class.

Bolles, Robert Henry . . .	<i>Marion</i> . . .	East Hall, 31.
Brothers, George Arthur . . .	<i>Lowell</i> . . .	West Hall, 26.
Hicks, Frank Files . . .	<i>W. Somerville</i> . .	East Hall, 34.
Ives, John Nash . . .	<i>Roxbury</i> . . .	East Hall, 26.
Merrill, Meldon Humphrey . . .	<i>Yarmouth, Me.</i> . .	East Hall, 14.
Ohata, Konosuke . . .	<i>Ibaraki-Ken, Japan</i> .	East Hall, 27.
O'Regan, Charles Sumner . . .	<i>Bondsville</i> . . .	West Hall, 16.
Perry, Leslie Lawrence . . .	<i>Rutland, Vt.</i> . .	East Hall, 31.
Pierce, Guy Clifford . . .	<i>Lowell</i> . . .	West Hall, 25.
Pindar, Ralph Waldo . . .	<i>Lowell</i> . . .	East Hall, 29.
Sabine, Edward Dana . . .	<i>Malden</i> . . .	East Hall, 16.
Smith, Warner Daniel . . .	<i>Marshfield, Vt.</i> . .	Mid. Hall, 12.
Symonds, Herbert Washburn . . .	<i>Hancock, N. H.</i> . .	East Hall, 10.
Taylor, William Gavin . . .	<i>Medford</i> . . .	East Hall, 34.
Thurston, Arthur . . .	<i>Haverhill</i> . . .	West Hall, 29.
Whiton, Charles Edward . . .	<i>Greenwood</i> . . .	Mid. Hall, 16.
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Cadieu, Edward Leland . . .	<i>Chelsea</i> . . .	East Hall, 14.
Chick, Walter Everett . . .	<i>Medford</i> . . .	East Hall, 34.
Clayton, Osro Randall . . .	<i>Weston, Vt.</i> . .	East Hall, 10.
Noyes, Charles Ellsworth . . .	<i>Lisbon, N. H.</i> . .	East Hall, 28.

Freshman Class.

Barden, Henrie Clark . . .	<i>No. Attleboro . . .</i>	425 Highland Ave.
Boardman, Harold Everett .	<i>Medford</i>	Mid. Hall, 5.
Brown, Thomas Dalton . .	<i>Boston</i>	30 No. Russell St.
Browning, Charles Augustus,	<i>Somerville</i>	Mid. Hall, 7.
Byam, Frank Albert . . .	<i>Waltham</i>	West Hall, 13.
Chase, Josiah Brown, Jr. .	<i>W. Newton</i>	Dean Hall, 3.
Clark, Charles Brooks . .	<i>Medford</i>	East Hall, 17.
Clark, Warren Stewart . .	<i>St. Albans, Vt. . .</i>	West Hall, 7.
Clark, William Warren . .	<i>Medford</i>	East Hall, 17.
Crowley, Daniel Francis . .	<i>Medford</i>	10 West St.
Eames, George Clifton . .	<i>Embden, Me. . . .</i>	65 Curtis St.
Edmands, John Stetson . .	<i>Somerville</i>	49 Thurston St.
Eldridge, Harold Norton . .	<i>Dexter, Me. . . .</i>	West Hall, 13.
Fenton, Robert Hall . . .	<i>Willimantic, Conn.,</i>	East Hall, 33.
Garcelon, Herbert Irving .	<i>W. Somerville . .</i>	Mid. Hall, 5.
Graves, Wallace Humphrey,	<i>Bangor, Me. . . .</i>	18 Park St.
Green, Charles Boden . . .	<i>Lynn</i>	East Hall, 26.
Hall, Walter Davis	<i>Medford</i>	East Hall, 8.
Hammond, Charles Lincoln .	<i>Atlantic</i>	East Hall, 13.
Healey, Rolla Edwin . . .	<i>Claremont, N. H.,</i>	Dean Hall, 9.
Hill, George William . . .	<i>Stoneham</i>	East Hall, 23.
Hill, Herbert Jasper . . .	<i>Boston</i>	West Hall, 21.
Holt, Ralph Warren . . .	<i>Stow</i>	Θ Δ X House.
Houghton, John Howard . .	<i>E. Boston</i>	Mid. Hall, 7.
Huston, Milton	<i>W. Falmouth, Me.,</i>	East Hall, 32.
Jacobs, Benjamin Foster, Jr.,	<i>Medford</i>	West Hall, 27.
Lane, Harry Alfred	<i>Foxboro</i>	Dean Hall, 14.
Mitchell, Stephen Clarence .	<i>Hull</i>	Dean Hall, 10.
Montgomery, Charles Eland,	<i>Lowell</i>	West Hall, 31.
Morgan, Albion Bateman . .	<i>Falmouth, Me. . .</i>	East Hall, 32.
Nash, Henry Ray	<i>Bradford</i>	East Hall, 33.
Noyes, Harry Goodenow . .	<i>Gorham, N. H. . .</i>	Dean Hall, 9.
Olmstead, Elmer Sheridan . .	<i>Somerville</i>	Mid. Hall, 7.
Parker, Richard Bentley . .	<i>Medford</i>	West Hall, 27.
Parker, Harry Orville . . .	<i>Atlantic</i>	East Hall, 13.
Parker, Charles William . .	<i>Reading</i>	West Hall, 13.
Plorme, Max Alarie	<i>Rocky Hill, Conn.,</i>	West Hall, 16.
Preble, Ernest Orello . . .	<i>Webster</i>	West Hall, 30.
Randlett, Fred Morse . . .	<i>Lawrence</i>	East Hall, 15.
Ray, Frederick Nash	<i>Bradford</i>	East Hall, 15.
Richardson, George Edward,	<i>Lowell</i>	West Hall, 31.
Rowbotham, George Walter,	<i>Boston</i>	West Hall, 10.
Russell, Howard Irving . .	<i>W. Somerville . .</i>	Mid. Hall, 5.

Ryder, Delano Richmond	<i>Marion</i>	East Hall, 18.
Smith, Kilby Page	<i>Waltham</i>	Dean Hall, 3.
Stebbins, Charles Bowles	<i>W. Somerville</i>	West Hall, 32.
Thayer, Arthur Ellis	<i>W. Somerville</i>	Mid. Hall, 5.
Walker, Charles Perley	<i>Lawrence</i>	Dean Hall, 10.
Weeks, Stephen Merrill	<i>Orford, N. H.</i>	East Hall, 33.
Welch, Walter Frederick	<i>Stoneham</i>	East Hall, 23.
Wheeler, Walter Stedman	<i>Hudson</i>	Dean Hall, 14.
Wyman, Walter Scott	<i>Oakland, Me.</i>	Dean Hall, 8.
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Simpson, John Fred	<i>S. Newmarket, N. H.</i>	East Hall, 9.

SPECIAL STUDENTS.

Atwood, Louise Russell	<i>Medford</i>	4 Garden St.
Clement, Sumner	<i>Newton Centre</i>	West Hall, 10.
Dolbear, Katy Ella	<i>College Hill</i>	134 Professors Row
Dresser, Walter Prescott	<i>Fitchburg</i>	West Hall, 3.
French, Allen Evander	<i>Waltham</i>	Dean Hall, 2.
Hayward, Daniel Baxter	<i>E. Braintree</i>	West Hall, 28.
Lambert, Fred Dayton	<i>Muscatine, Ia.</i>	Δ T Δ House.
Leighton, Margaret Wentworth	<i>Malden</i>	573 Pleasant St.
McKenzie, Archibald	<i>Woodstock, Vt.</i>	West Hall, 8.
Putnam, Frank Wendell	<i>Charlestown</i>	West Hall, 32.
Smith, Frank Campbell	<i>Waltham</i>	West Hall, 13.
Washburn, Arthur Harold	<i>Brockton</i>	16 Bolton Place.
Wassum, Elizabeth French	<i>Palmer</i>	28 Professors Row.
Whitney, John Augustus	<i>Claremont, N. H.</i>	West Hall, 27.

SUMMARY.

GRADUATES	10
COURSES IN LIBERAL ARTS.	
Seniors	14
Juniors	23
Sophomores	32
Freshmen	36
	— 105
ENGINEERING COURSES.	
Seniors	13
Juniors	3
Sophomores	20
Freshmen	53
	— 89
SPECIAL STUDENTS	14
	— 14
TOTAL IN COLLEGE OF LETTERS	218
TOTAL IN DIVINITY SCHOOL	40
TOTAL IN MEDICAL SCHOOL	80

Requirements for Admission.

SUBJECTS OF EXAMINATION.

The subjects in which candidates for admission to the Freshman Class may be examined are given below. The requirements for candidates for different courses will be found in the examination groups on pages 29 and 30.

Compliments of President Capen.

ferred, equivalents will be accepted; also in place of the orations of Cicero and requirement 5, an examination may be taken, if desired, on average passages from the above-named works, not included in the portions prescribed.

7. GREEK GRAMMAR. — Hadley's, Crosby's, Curtius's, or Goodwin's Greek Grammar, including Prosody. *Greek.*

8. XENOPHON. — Anabasis, four books.

9. HOMER. — Iliad, three books.

10. GREEK COMPOSITION. — The translation of simple English prose into Greek.

ALTERNATIVES. — In place of requirements 8 and 9, translation at sight of easy passages of the Anabasis and average passages from the Iliad (with a vocabulary of the less-used words).

II. ELEMENTARY GERMAN.

(a) Proficiency in elementary grammar, implying especially familiarity with the following topics: declension of such nouns as are readily classified, of adjectives, and pronouns; conjugation of weak, and of the more usual strong verbs; the more common prepo-

German.

Ryder, Delano Richmond	<i>Marion</i>	East Hall, 18.
Smith, Kilby Page	<i>Waltham</i>	Dean Hall, 3.
Stebbins, Charles Bowles	<i>W. Somerville</i>	West Hall, 32.
Thayer, Arthur Ellis	<i>W. Somerville</i>	Mid. Hall, 5.
Walker, Charles Perley	<i>Lawrence</i>	Dean Hall, 10.
Weeks, Stephen Merrill	<i>Orford, N. H.</i>	East Hall, 33.
Welch, Walter Frederick	<i>Stoneham</i>	East Hall, 23.
Wheeler, Walter Stedman	<i>Hudson</i>	Dean Hall, 14.
Wyman, Walter Scott	<i>Oakland, Me.</i>	Dean Hall, 8.
<hr/>		
John Fred	<i>S. Newmarket, N. H.</i>	East Hall, 9.

Putnam, Frank French

Smith, Frank Campbell	<i>Waltham</i>	West Hall, 15.
Washburn, Arthur Harold	<i>Brockton</i>	16 Bolton Place.
Wassum, Elizabeth French	<i>Palmer</i>	28 Professors Row.
Whitney, John Augustus	<i>Claremont, N. H.</i>	West Hall, 27.

SUMMARY.

GRADUATES	10
COURSES IN LIBERAL ARTS.	
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Sophomores	32
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Seniors	13
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	— 89
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TOTAL IN COLLEGE OF LETTERS	218
TOTAL IN DIVINITY SCHOOL	40
TOTAL IN MEDICAL SCHOOL	80

Requirements for Admission.

SUBJECTS OF EXAMINATION.

The subjects in which candidates for admission to the Freshman Class may be examined are given below. The requirements for candidates for different courses will be found in the schedule of examination groups on pages 29 and 30.

1. LATIN GRAMMAR.—Allen and Greenough's or Harkness's *Latin*. Grammar, including Prosody.
2. CÆSAR.—Gallic War, Books I–IV.
3. CICERO.—Orations against Catiline, for Archias, Marcellus, and the Manilian Law.
4. VIRGIL.—Æneid, Books I–VI.
5. OVID.—Metamorphoses, 2,500 lines.
6. LATIN COMPOSITION.—Harkness's Latin Composition to Part III, and translation into Latin of a connected passage of English prose, not taken from the text-book, but involving only familiar words and idioms.

ALTERNATIVES.—While the foregoing requirements are preferred, equivalents will be accepted; also in place of the last two orations of Cicero and requirement 5, an examination may be taken, if desired, on average passages from the above-named works, not included in the portions prescribed.

7. GREEK GRAMMAR.—Hadley's, Crosby's, Curtius's, or Goodwin's Greek Grammar, including Prosody. *Greek.*
8. XENOPHON.—Anabasis, four books.
9. HOMER.—Iliad, three books.
10. GREEK COMPOSITION.—The translation of simple English prose into Greek.

ALTERNATIVES.—In place of requirements 8 and 9, translation at sight of easy passages of the Anabasis and average passages from the Iliad (with a vocabulary of the less-used words).

II. ELEMENTARY GERMAN.

(a) Proficiency in elementary grammar, implying especially familiarity with the following topics: declension of such nouns as are readily classified, of adjectives, and pronouns; conjugation of weak, and of the more usual strong verbs; the more common prepo-

German.

German. sitions; the simpler uses of the modal auxiliaries; the simpler rules of syntax and of word order.

[This specification of topics is not proposed as restrictive, but rather to emphasize the importance of a thorough grounding of the pupil in those elements on which later good work is necessarily founded. Proficiency in grammar may be tested both by direct questioning and through translation of simple English into German.]

(b) Ability to translate a passage of simple prose at sight, a vocabulary of the less-used words being furnished.

[It is believed that the requisite facility can be acquired by reading, concurrently with the work in the grammar, from one hundred and fifty to two hundred duodecimo pages of easy German, chiefly narrative prose, with a few lyric poems.]

(c) Ability to pronounce German, and to recognize German words and simple phrases when uttered.

[It is recommended that careful attention be given from the beginning to the fluent and intelligent reading aloud of the German works used in the class-room.]

12. INTERMEDIATE GERMAN.

(a) The candidate must give evidence of a thorough knowledge of the elementary grammar (see above, 11*a*), and of the use of modes and tenses.

(b) He must have translated the equivalent of four hundred pages of German, including *Wilhelm Tell* (Schiller), and twenty pages of lyric ballads.

(c) He must be able to pronounce German, and to render simple English sentences into that language.

13. ADVANCED GERMAN.

(a) Proficiency in more advanced grammar. In addition to a thorough knowledge of accidence (including the elements of word-formation), and of the principal values of prepositions and conjunctions, the candidate must be familiar with the essentials of German syntax, particularly that of the modal auxiliaries and the subjunctive and infinitive modes.

(b) Ability to translate ordinary German, to be acquired by the reading, in addition to the elementary requirement, of the following works: *Der Fluch der Schönheit* (Riehl); *Aus dem Staat Friedrichs des Grossen* (Freitag); *Die Harzreise* (Heine); the first three books of *Dichtung und Wahrheit* (Goethe); *Minna von Barnhelm* (Lessing); *Wilhelm Tell* and *Das Lied von der Glocke* (Schiller); and thirty pages of lyrics or ballads.

(c) Ability to write in German a paragraph upon an assigned subject chosen from the works specified in the preceding section.

[While, at the examination, matters of very subordinate interest or of minor detail will not be set as subjects for composition, it is hoped that teachers may be led by this requirement to stimulate from the beginning the pupil's interest in the subject-matter of the works read in preparation.]

14. ELEMENTARY FRENCH.

French.

(a) Proficiency in elementary grammar, implying especially familiarity with the following topics: inflection of nouns and adjectives for gender and number, excepting unusual cases; the "pro-nominal adjectives"; the use of pronouns, especially the forms and positions of personal pronouns; the partitive constructions; the inflection of the regular and the more usual irregular verbs, — such as *dire, faire*, and the classes represented by *ouvrir, sentir, venir, paraître, conduire*, and *craindre*.

[See note under Elementary German (a).]

(b) Ability to translate simple prose at sight.

[It is believed that the requisite facility can be acquired by reading, concurrently with the work in the grammar, from two hundred to four hundred duodecimo pages from at least three dissimilar works.]

(c) Ability to pronounce French, and to recognize French words and simple phrases when uttered.

[See note under Elementary German (c).]

15. INTERMEDIATE FRENCH.

(a) and (c) as above.

(b) He must have translated the equivalent of five hundred pages of French, including the plays *Mademoiselle de la Seiglière* (Sandeau) and *Athalie* (Racine).

16. ADVANCED FRENCH.

(a) Proficiency in more advanced grammar. In addition to a knowledge of the accidence and of the values of prepositions and conjunctions, the candidate must be familiar with the essentials of French syntax, especially the use of modes and tenses, and with the more frequently recurring idiomatic phrases.

(b) Ability to translate standard French, to be acquired by reading, in addition to the elementary requirement, not less than one thousand duodecimo pages, including *Le siège de Berlin* and *La dernière classe* (Daudet); *Colomba* (Mérimée); *Mademoiselle de la Seiglière*, the play (Sandeau); *Jeanne Darc* (Henri Martin); and one play each of *Corneille*, *Racine*, and *Molière*.

(c) Ability to write in French a paragraph upon an assigned subject chosen from the works specified in the preceding section.

[See note under Advanced German (c).]

17. ARITHMETIC, including the Metric System.

18. ALGEBRA, through quadratic equations, including radical quantities, together with proportion, arithmetical and geometrical

Mathematics.

Mathematics. progression, and the binomial theorem for positive integral exponents.

19. PLANE GEOMETRY.

20. SOLID GEOMETRY.

History. 21. ANCIENT HISTORY (Greece and Rome), with either
(a) MEDIEVAL AND MODERN EUROPEAN HISTORY, or
(b) THE HISTORY OF ENGLAND AND THE UNITED STATES.

The amount of preparation required is indicated by the following list of works: For Ancient History, Oman's or Smith's (smaller) Greece, Allen's Roman People; for Mediæval and Modern Europe, Myers's General History; for the History of England and the United States, Montgomery's Leading Facts in English History, Higginson's Young Folks' History of the United States, or Johnston's History of the United States for Schools.

English. 22. ENGLISH GRAMMAR AND COMPOSITION. — Spelling, punctuation, structure of sentences, correct use of words, clearness of expression.

The examination will consist (1) in criticising specimens of incorrect English; (2) in writing a short composition on a subject assigned. Subjects for composition will be drawn from the following standard works in English literature. All the books named for the given year are to be read, and, from two or three of them, subjects will be assigned at the time of examination.

For 1894. — Shakespeare's Julius Cæsar and Merchant of Venice; Scott's Lady of the Lake; Arnold's Sohrab and Rustum; The Sir Roger de Coverley Papers in the Spectator; Macaulay's second Essay on the Earl of Chatham; Emerson's American Scholar; Irving's Sketch Book; Scott's Abbot; Dickens's David Copperfield.

For 1895. — Shakespeare's Merchant of Venice and Twelfth Night; Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Longfellow's Evangeline; the Sir Roger de Coverley Papers in the Spectator; Macaulay's Essays on Milton and Addison; Webster's First Bunker Hill Oration; Irving's Sketch Book; Scott's Abbot.

For 1896. — Shakespeare's Merchant of Venice and Midsummer Night's Dream; Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Longfellow's Evangeline; Macaulay's Essay on Milton; De-foe's History of the Plague in London; Scott's Woodstock; Webster's First Bunker Hill Oration; Irving's Tales of a Traveller; George Eliot's Silas Marner.

Sciences. 23. PHYSICS. The requirement in Physics is an acquaintance with the subject as treated in Avery's or Gage's work, or any other of similar grade, with special attention to Mechanics and ability to work out numerically problems in that department.

24. CHEMISTRY. Remsen's Briefer Course or its equivalent. *Sciences.*

25. NATURAL HISTORY. Any two of the four subjects: Botany, Zoölogy, Physiology, or Geology. The amount required in each is essentially covered by any good text-book for secondary schools. In Botany and Zoölogy, laboratory work is of more importance than the study of the text-book. As illustrating the character of preparation required, the following books may be mentioned: In Botany, Bessey's Briefer Course, Campbell's Structural and Systematic Botany, or Spaulding's Introduction to Botany; in Zoölogy Colton's Practical Zoölogy; in Physiology, Huxley's Elementary Physiology, Jenkins's Advanced Lessons in Human Physiology, or Martin's Human Body, briefer course; in Geology, Dana's Geological Story Briefly Told, or Leconte's Elements of Geology.

EXAMINATION GROUPS.

Candidates for courses leading to the degree of Bachelor of Arts must take their examination in the subjects comprised in one of the two following groups: — *For courses leading to degree of A. B.*

Group I.

LATIN, 1, 2, 3, 4, 5, and 6.
GREEK, 7, 8, 9, and 10.
GERMAN, 11, or FRENCH, 14.
MATHEMATICS, 17, 18, and 19.
HISTORY, 21.
ENGLISH, 22.

Group II.

LATIN, MATHEMATICS, HISTORY, and ENGLISH, as in I.
GERMAN, 11 and 13. } or { FRENCH, 14 and 16.
FRENCH, 14. } { GERMAN, 11.

This group differs from Group I in substituting for Greek advanced work in Modern Languages.

Candidates for courses leading to the degree of Bachelor of Philosophy must take their examination in the subjects comprised in one of the two following groups: — *For courses leading to degree of Ph. B.*

Group III.

LATIN, MATHEMATICS, HISTORY, and ENGLISH, as in I.
GERMAN, 11 and 12. } or { FRENCH, 14 and 15.
FRENCH, 14. } { GERMAN, 11.

Group IV.

MATHEMATICS, HISTORY, and ENGLISH, as in I.
 GERMAN, 11 and 13. } or { FRENCH, 14 and 16. } or { GERMAN, 11
 FRENCH, 14. } { GERMAN, 11. } { FRENCH, 14
 and 15.

PHYSICS, 23.

CHEMISTRY, 24.

NATURAL HISTORY, 25.

[LATIN, 1, 2, 3, and a part of 4, or their equivalent, will be accepted in place of one intermediate Modern Language, that is, GERMAN, 11 and 12, or FRENCH, 14 and 15.]

*For Candidates
for Engineering
Courses.*

Candidates for the courses leading to the degrees of Bachelor of Electrical or Civil Engineering will be required to take the subjects comprised in

Group V.

MATHEMATICS, 17, 18, 19, and 20.

GERMAN, 11, or FRENCH, 14.

ENGLISH, 22.

Groups III and IV are offered to meet the needs of graduates of the English courses, so called, in the best high schools, who may desire to enter upon college study looking toward a degree. It will be seen, by reference to the appropriate numbers in the preceding subject list, that Group III accepts a smaller amount of preparation in the modern languages than that required for entrance through Group II to courses leading to the degree of Bachelor of Arts. Group IV allows the substitution for Latin of an increase over the requirement of Group III in modern languages, and of elementary work in three scientific subjects.

GENERAL INFORMATION RELATING TO EXAMINATIONS.

The regular examination for admission will begin on the day after Commencement, and continue through the two following days. A second examination will also be held on the Tuesday, Wednesday, and Thursday preceding the beginning of the college year. The examination will begin at 9 o'clock A. M., on each of these days. The assignment of examination subjects appears in the Calendar, pages 4 and 5.

At the regular examination in June, those who will be candidates for admission to the Freshman class one year later may present themselves for a preliminary examination, if certified by their teachers to be prepared in not less than half of the number of subjects required for admission to the course proposed, and may receive certificates if they pass in not less than three quarters of the number of subjects presented. English may be presented at the final examination only.

For admission to advanced standing, an examination must be well sustained both in the preparatory studies and in the studies in which the candidate desires credit for advanced work.

The certificates of teachers in schools of good standing, whose courses have been approved, are accepted in lieu of an examination. To be received, the certificate (blank forms of which will be sent on application to the Secretary of the Faculty) must specify which of the subjects have been pursued and to what extent, or what are offered as equivalents in case the preparatory course has differed from that presupposed in the foregoing requisitions, and must express the opinion of the teacher that the candidate is well prepared to enter upon a college course. Certificates must be in the hands of the Secretary at least four weeks before the beginning of the college year. Candidates so admitted will be regarded as upon a special probation, which may be terminated at any time if their preparation is found to be inadequate.

A fee of five dollars must be paid in advance by every candidate who is examined at any other place than the College.

Requirements for Degrees.

Students may enter upon their work in the courses in Liberal Arts as candidates for the degree of Bachelor of Arts or for that of Bachelor of Philosophy, according to the examination group upon which they are admitted to the college. In either case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study. Candidates for the degree of Bachelor of Philosophy will be necessarily somewhat more limited in their selection of subjects because of the nature of their preparation. They may obtain the degree of Bachelor of Arts on the satisfactory completion of twenty-four term hours of additional work in approved elective subjects.

The plan of study offered to the student is at once liberal, controlled, and elastic. It combines the requirements of the general culture, which is the prime object of the undergraduate college course, with an opportunity for the development of the individual on the lines to which he is especially adapted, and for preparation for university and professional study. Throughout the course students have large liberty in choosing their work, but they are brought into personal advisory relations with the major instructors, who arrange and guide a considerable portion of their work after its general direction has been determined. A reasonable amount of guided specialization is thus provided for, while the personal relations of the student with the major instructor form a valuable adjunct to the routine work of instruction in developing the interest and the character of the students. All work actually accomplished by the student in regular standing counts toward the attainment of the degree. The period within which that may be attained depends upon the industry and ability of the individual student.

SYNOPSIS OF THE REQUIREMENTS.

[NOTE. — The unit for indicating the requirements is the *term hour*, representing the number of hours per week required in each subject, expressed for a period of one term. Thus a subject calling for three hours a week for one term represents a requirement of three term hours; if it calls for three hours a week for one year, the requirement in that subject is six term hours.]

(1) The requirement for the degree of Bachelor of Arts or Bachelor of Philosophy is the satisfactory completion of subjects aggregating one hundred and twenty-eight term hours.

(2) The program of prescribed studies is as follows: —

	TERM HOURS.
LANGUAGES (Latin, Greek, French, German; each student to take <i>three</i>)	18
ENGLISH (Rhetoric, Composition, Themes, Oratory)	12
MATHEMATICS	6
SCIENCE (Physics, Chemistry, Biology; each student to take <i>one</i>)	6
MENTAL AND MORAL SCIENCES (Psychology, Logic, Ethics, History, Economics; each student to take <i>one full or two half</i> subjects)	6
PHYSICAL TRAINING	2
A total of	<u>50</u>

The requirements are by groups, not by special subjects, and in each group except English and Mathematics some choice is allowed the student.

The program of the student in the first year will be made up from the prescribed groups, but the prescribed work in the group of Mental and Moral Sciences cannot be taken before the second year except by special permission of the Faculty.

(3) At the end of the first year the student is required to choose a major subject, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major subject. The major subject and the plan of work for the first half-year must be reported by the student, in the proper form, upon registration on the opening day of the college year.

(4) Acting under the advice of his instructor in his major subject, the student shall make up a program of eighteen term

hours in collateral subjects; that is, subjects tending to strengthen and assist his work in his major. The student's major instructor is to be his official adviser on general matters relating to his college course.

(5) The remaining forty-two term hours of the required aggregate are to be made up by the free election of the student from the various subjects offered, limited only by such special restrictions as may be applied to the taking of certain subjects.

(6) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have attained Grade B as an average for his entire work.

Summary.

Prescribed work	50 term hours.
Major subject	18 " "
Collateral subjects	18 " "
Free electives	42 " "
	<hr/>
	128 " "

Departments of Instruction.

MAJOR SUBJECTS.

Major subjects may be chosen in the following departments : —

LATIN.	POLITICAL SCIENCE.
GREEK.	MATHEMATICS.
FRENCH.	PHYSICS.
GERMAN.	CHEMISTRY.
ENGLISH LITERATURE.	BIOLOGY.
HISTORY.	ENGINEERING.

In the subjoined statement of the work done in the different departments, the name of the major instructor is that given at the head of each department which offers a major course. In other cases the name is given of the instructor in general charge of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Bracketed subjects will not be given in 1894-95. In most cases alternates are indicated, which fill their places in the program for that year. All subjects continue through the year unless otherwise indicated.

A tabular view of the program of hours assigned to the subjects in the courses in Liberal Arts for 1894-95 will be found on page 61. No two subjects assigned to the same hour can be taken simultaneously by any student. The revision of the program for 1895-96 will be announced before the close of the current college year, so that plans for future work may be made with reference thereto.

ENGLISH.

PROFESSOR SHIPMAN.

The course of instruction in English aims at both theoretical knowledge and practical results. It begins with extemporaneous composition in the Freshman year. In this exercise, which is weekly, formal theme-writing is avoided. Topics are assigned, with some variety of method, at the time of writing, usually not the same topic for all, but a list is furnished from which each writer may select, giving preference to what is nearest at hand and best understood. The brief essays are subject to criticism both in class and with the individual writers. With suitable modification, this extemporaneous writing is continued at intervals to the end of the course. The formal study of Rhetoric begins with the second year. A text-book is used as the basis of instruction, and is made, as far as possible, a help to the intelligent discussion of principles, rather than a burden to be carried. The close relation of Rhetoric to both Psychology and Logic is kept in sight. Rhetorical precepts are applied in the criticism of this course, and especially in composition, which is required to the middle of the third year. The student's work in literature and other departments of college study is made to furnish real occasion, as well as material, for the preparation of essays. The required Rhetoric may be followed by an elective course in some of the applications of the subject, or exclusively in composition.

SUBJECTS.

1.—Composition, Lectures, Discussion of Papers. *One hour a week for the first year. Tuesday at 2.* PROFESSOR SHIPMAN.

2.—Rhetoric, with practical exercises. Second year. *Monday, Wednesday, and Friday at 10.45 (first half-year).*

PROFESSOR SHIPMAN.

3.—Composition and Themes. Second year. *Monday and Wednesday at 10.45 (second half-year).*

PROFESSOR SHIPMAN.

4.—Themes and Forensics. Third year. *Tuesday, Thursday, and Saturday at 8.45 (first half-year).*

PROFESSOR SHIPMAN.

5.—Daily Composition. Elective, or optional with 3. *Tuesday, Thursday, and Saturday at 8.45 (second half-year).*

PROFESSOR SHIPMAN.

Subjects 1, 2, 3, or 5, and 4 will constitute, with Oratory 1, the prescribed work in English.

6.—Rhetoric (advanced course). Elective for students who have completed English 2, with 3 or 5. *Monday, Wednesday, and Friday at 11.45 (first half-year).* PROFESSOR SHIPMAN.

7.—Composition (advanced course). Elective for students who have completed the prescribed work in English. *Monday, Wednesday, and Friday at 11.45 (second half-year).* PROFESSOR SHIPMAN.

8.—History of the English Language. *Monday, Wednesday, and Friday at 10.45 (first half-year).* PROFESSOR MAULSBY.

Some knowledge of ancient and modern languages is essential to a profitable study of the history of English. The successive stages in the development of the vocabulary and the grammar of our speech are noted, and this general view is supplemented with inquiry into the derivation and history of specific words.

ORATORY.

PROFESSOR MAULSBY.

It is intended that the study of oratory shall be of practical benefit to the general student, whether or not he looks to professional pursuit of the art. Exercises are practised in correct breathing, the production of tone, and in gesture; moreover, individual faults are pointed out, and, so far as possible, remedies suggested. The required course aims at reading that shall be intelligent, natural, and forcible. Attempt is made to develop, both in voice and gesture, spontaneous expression from the mental side. In the elective course opportunity is given for individual presentation of selections from standard literature, and for practice in debate on subjects of current interest. Throughout the work the student meets the instructor personally, for rehearsal and criticism.

SUBJECTS.

1.—Class exercises in vocalization and gesture; reading of standard selections; individual declamation. *Section a, Tuesday; Section b, Thursday at 11.45.* PROFESSOR MAULSBY.

2.—Individual declamation, original or selected; practice in debate. *Tuesday at 2.* PROFESSOR MAULSBY.

LATIN.

PROFESSOR DEARBORN.

The work in this department is arranged with a view to giving students (1) a good knowledge of the Latin language and of a portion of its literature, and, as a result of careful and critical translation, greater facility and accuracy in the use of English; (2) an acquaintance with the early history of Rome, the fundamental principles of the Roman constitution, and the important features of the public and private life of the people, by reading Latin authors and by special study of these subjects; and (3) the mental training by which a man is better equipped for any pursuit in life, and the habit of independent study and research which is essential to all true scholarship.

In the early subjects the forms and construction of the language are carefully studied. Translation, both oral and written, into appropriate English, holds an important place in all the work of the department. Reading without translation is practised to some extent. Considerable attention is given to the comparative etymology of Latin, Greek, and English. Lectures are given on the history of the Latin language and literature. The later subjects are especially adapted to the needs and attainments of those who elect the study, and more attention is given to the subject-matter and to the style and spirit of the authors read.

The work in Roman history and archæology is carried on by means of recitations, illustrated lectures, and private investigations by the students, the results of which are presented in brief essays and read and criticised before the class.

SUBJECTS.

1. — Livy; Cicero, Cato Major; Horace; Antiquities and Legendary History of Rome, with illustrated lectures; lectures on the History of the Latin Language and Literature. *Tuesday, Thursday, and Saturday at 10.45.*

PROFESSOR DEARBORN.

Latin I is introductory to all later subjects, and will be taken by those electing Latin as a prescribed language.

2. — Horace; Cicero, Tusculan Disputations; Tacitus, Germania and Agricola. *Monday, Wednesday, and Friday at 11.45.*

PROFESSOR DEARBORN.

3.—Juvenal; Pliny; Plautus; Classic Archaeology and Art. *Tuesday, Thursday, and Saturday at 9.45.* PROFESSOR DEARBORN.

4.—Cicero; Terence; Catullus; Quintilian. *Tuesday, Thursday, and Saturday at 8.45.* PROFESSOR DEARBORN.

5.—Livy; Cicero; Latin Composition. *Wednesday and Friday at 10.45.* PROFESSOR DEARBORN.

Latin 5 is supplementary to Latin 1, and when taken should be taken simultaneously with it in the Freshman year.

[6.—Roman satirists, with special reference to the works of Horace and Juvenal. *Tuesday and Thursday from 4 to 5.30.*

PROFESSOR GRAVES.]

7 — Terence (Andria, Adelphoe, Heauton Timorumenos, and Phormio); Plautus (Captivi, Menaechmi, Trinummus). *Tuesday and Thursday from 4 to 5.30.* PROFESSOR GRAVES.

Latin 6 and 7 are offered in alternate years, 7 being open in 1894-95. Although any one is eligible who has completed Latin 3, they are intended primarily for students in the graduate department. Lectures are given in 6 on the history of Roman satire and on the satirists, and in 7 on the development of the theatre, the *sermo plebeius*, and the styles of Plautus and Terence.

GREEK.

PROFESSORS SCHNEIDER AND GRAVES.

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, special effort being made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspirations of a noble literature. To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are discussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

SUBJECTS.

1. — Elementary: Goodwin's Grammar; White's Beginner's Book; Xenophon (Anabasis and Hellenica); Homer (Iliad I-III); Plato (Apology and Crito); Woodruff's Greek Composition. *Double subject. Monday, Wednesday, and Friday at 3, and Tuesday, Thursday, and Saturday at 9.45.*

PROFESSOR GRAVES.

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college.

2. — Xenophon (Memorabilia or Cyropædia); Herodotus (Books VI and VII); Homer (Phæacian Episode of the Odyssey); Sophocles (Philoctetes); Greek Composition. *Monday, Wednesday, and Friday at 2.*

PROFESSOR GRAVES.

Greek 2 is the course for students entering with Greek. Particular attention is given to the syntax of the language and to the development of the dialects. Incidentally, study is made of the customs and daily life of the people. The course is supplemented by lectures on Greek literature, Grecian antiquities, and on the literary characteristics of the authors read.

3. — Lysias (Selections); Antiphon (Herodes and Choreutes); Demosthenes (On the Crown); Euripides (Medea); Æschylus (Seven against Thebes); reading at sight. *Tuesday, Thursday, and Saturday at 11.45.*

PROFESSOR GRAVES.

[4. — Andocides (Mysteries and On the Return); Isocrates (Panegyric); Æschines (Against Ctesiphon); Euripides (Hippolytus); Æschylus (Prometheus Bound); reading at sight. *Tuesday, Thursday, and Saturday at 11.45.*

PROFESSOR GRAVES.]

Greek 3 and 4 are offered in alternate years and are open to those who have taken Greek 2. It is intended in either case to give the first term to the critical study of the orators and the second to the dramatists. Rhythm and metre are studied in connection with the dramatists, and modes and tenses with the orators. At suitable points, lectures on the laws, oratory, theatre, and religion of the Greeks are given.

5. — Theocritus (Idylls and Epigrams); Pindar (Olympian and Pythian Odes); Tyler's Selections from Greek Lyrics; reading at sight in the Odyssey. *Tuesday, Thursday, and Saturday at 9.45.*

PROFESSOR SCHNEIDER.

Greek 5 is open to those who have completed Greek 3 or 4. Much attention is paid to the development of Greek lyric poetry, and the various theories of rhythm and metre are discussed. Lectures on appropriate topics are given in connection with the work.

6.—Plato (Symposium); Aristotle (Ethics, Books I-IV, or Politics); reading at sight in Herodotus and Lucian. *Monday, Wednesday, and Friday at 2.* PROFESSOR SCHNEIDER.

Greek 6 is open to those who have completed Greek 3 or 4. A critical study of the authors read is supplemented by a general survey of Greek philosophy.

7.—Topics in Greek History; reading at sight in Homer and Euripides; Greek Composition. *Tuesday, Thursday, and Saturday at 8.45.* PROFESSOR GRAVES.

Greek 7 may be taken by any one who has had the equivalent of Greek 1. It is especially suited to Freshmen intending to elect Greek as their major.

8.—Demosthenes (Private, Hellenic, Olynthiac, and Philippic Orations); Sophocles (Plays and Fragments); Greek Composition. *Wednesday and Friday from 4 to 5.30.* PROFESSOR GRAVES.

[9.—Study of the Sources of Greek History; critical reading of Herodotus, Thucydides, Xenophon, and Diodorus Siculus; Greek Composition. *Wednesday and Friday from 4 to 5.30.*

PROFESSOR GRAVES.]

[10.—Plato (Gorgias, Phaedo, Republic I-V); Greek Composition. *Wednesday and Friday from 4 to 5.30.* PROFESSOR GRAVES.]

Greek 8, 9, and 10 are rotated, so that each is given every third year, 8 being the subject for 1894-95. These subjects are intended for those wishing to pursue graduate work in Classical Philology. They may, however, on permission from the instructor, be taken by any one who has completed Greek 3 or 4. Independent work is encouraged throughout, and theses are read and criticised by the students. Lectures are given in 8 on legal antiquities, in 9 on Greek History, and in 10 on the life, works, style, and philosophy of Plato.

GERMAN.

PROFESSOR FAY.

The aim of the department is twofold, according as the student has entered with the elementary or advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information, and medium of literary culture; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elemen-

tary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill; in the intermediate year the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced courses the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms. In all subjects, composition forms an important element in instruction and in the practice of the language. Though no attempt is made to teach the student to speak the language, he is trained from the outset to hear and to understand it when spoken, chiefly for the sake of the reflex influence of such practice upon pronunciation.

Five consecutive subjects are offered. While it is not impossible to take these five subjects within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken by some at least in their preparatory work.

SUBJECTS.

1.—Joynes-Meissner, Grammar; Bernhardt, *Im Zwieliicht*, II.; Riehl, *Der Fluch der Schönheit*; Freytag, *Aus dem Staat Friedrichs des Grossen*; Composition. *Tuesday, Thursday, and Saturday, (a) at 8.45, (b) at 9.45.*

PROFESSOR FAY.

2.—Lessing, *Minna von Barnhelm*; Schiller, *Wilhelm Tell*; Wieland, *Oberon*; Heine, *Die Harzreise*; Müller, *Geschichte des deutschen Volkes*, §§ 532 ff. (*Struggle against the French Revolution*); Goethe, *Hermann und Dorothea*; Grammar and Composition; one essay in German. *Monday, Wednesday, and Friday at 9.45.*

PROFESSOR FAY.

3.—Schiller, *Maria Stuart* (with Dünzer's *Erläuterungen*), *Geschichte des Abfalls der Niederlande* (selections); Goethe, *Egmont*; Müller's *Geschichte*, §§ 374-419 (*The 'Thirty Years' War*); Schiller, *Wallenstein*; *Balladen und Romanzen* (Buchheim's collection); two essays in German. *Tuesday, Thursday, and Saturday at 11.45.*

PROFESSOR FAY.

4.—Lessing, *Prosa*, *Nathan der Weise*; Goethe, *Tasso*, *Faust*; Dünzer, *Erläuterungen zu Nathan, zu Tasso, zu Faust*; two essays in German. *Monday, Wednesday, and Friday at 11.45.*

PROFESSOR FAY.

5. — Vilmar, *Geschichte der deutschen Literatur*, with illustrative texts for principal epochs. Course in Middle High German: *Das Nibelungenlied*; *Walther von der Vogelweide*. Thesis for honor men. *Monday, Wednesday, and Friday at 10.45.* PROFESSOR FAY.

FRENCH.

PROFESSOR FAY AND MR. LEWIS.

Five consecutive subjects are offered. The plan and scope of the department are, in general, the same as those of the German department, to the statements of which the student is referred.

SUBJECTS.

1. — Edgren's Grammar; Super's French Reader; Mérimée, *Colomba*; Sandeau, *Mademoiselle de la Seiglière* (the play); Grammar and Composition. *Tuesday, Thursday, and Saturday, (a) at 8.45, (b) at 9.45.* MR. LEWIS.

2. — Readings from French History (Super's collection); H. Martin, *Jeanne d'Arc*; Racine, *Athalie*; Molière, *L'Avare*; Corneille, *Polyeucte*; George Sand, *Les Maîtres Mosaïstes*; two essays in French. *Monday, Wednesday, and Friday at 8.45.* MR. LEWIS.

3. — Literature of the 17th century: Racine, *Andromaque*, *Mithridate*, *Phèdre*; Molière, *Le Bourgeois Gentilhomme*, *Le Misanthrope*, *Le Tartufe*; *La Société Française au XVII^e Siècle* (Crane); Molière, *Les Précieuses Ridicules*, *Les Femmes Savantes*; *Madame de Sévigné*, *Lettres Choies*; one essay in French. (Ploetz's *Nouvelle Grammaire Française* will be used for reference in Course 3, and the German exercises of his *Cours Gradué de Thèmes* will be translated into French.) *Monday, Wednesday, and Friday at 8.45.*

PROFESSOR FAY.

4. — Literature of the 19th century: *Le Romantisme Français* (Crane); Hugo, *Hernani*, *Ruy Blas*, *L'Année Terrible*; Lamartine, *Jocelyn*; George Sand, *Indiana*; De Musset, *Confessions d'un Enfant du Siècle*; De Vigny, *Cinq-Mars*; Taine, *La Fontaine et ses Fables*; Cherbuliez, *Méta Holdenis*; two essays in French. *Monday, Wednesday, and Friday at 3.* MR. LEWIS.

[5. — Demogeot, *Littérature de la Langue Française*, with illustrative texts for 16th and 18th centuries; two essays in French. Course in Old French: *La Chanson de Roland*; Joinville, *Histoire de Saint Louis*. Thesis for honor men. PROFESSOR FAY.]

ITALIAN.

PROFESSOR FAY.

The course offered in Italian is open to those only who have had two years of college work in French. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with the characteristics of contemporary and classic literature.

SUBJECT.

1.—Grandgent's Grammar and Composition; De Amicis, *Spagna*; Maffei, *Merope*; Dante, *Divina Commedia* (Scartazzini's edition). *Tuesday, Thursday, and Saturday at 10.45.*

PROFESSOR FAY.

HEBREW.

DR. CURTIS.

Two subjects, each occupying two hours a week for a year, are offered in Hebrew, enabling the student to obtain a knowledge of the rudiments of the language, and if desired to pursue it further and obtain some knowledge of the literature. It will be noticed that these subjects are given in alternate years.

SUBJECTS.

[1.—Rudiments of Hebrew Grammar; Vocabulary and Word Studies; Reading of Easy Prose, with Criticism. *Tuesday and Thursday at 3.*

DR. CURTIS.]

2.—Advanced Hebrew; Readings from Ancient, Middle, and Late Hebrew; Discussion of the Critical Questions involved. *Tuesday and Thursday at 3.*

DR. CURTIS.

ENGLISH LITERATURE.

PROFESSOR MAULSBY.

The study of our literature offers opportunity for acquaintance with the work of selected English writers, from the time of Chaucer to the present. Intelligent appreciation of the author's thought and of his characteristic mode of expression is the immediate result held in view. Biographical and philo-

logical details, the effect of environment, and the mass of published criticism that clusters about the great writers, are not neglected, although given a subordinate place. The ultimate object of the course is mainly the unmeasured yet positive culture that inheres in open-minded intercourse with the masters in literature. The method pursued demands attentive reading of much more than can be considered in the class-room, frequent written expression of literary judgments, and occasional private investigation of topics not otherwise treated. Students are advised to adhere as closely as possible to the order of subjects as indicated by the numbering. The library contains multiple copies of many of the authors read.

SUBJECTS.

[1.—Chaucer. *Monday, Wednesday, and Friday at 3 (first half-year).* PROFESSOR MAULSBY.]

Morris's edition of the Prologue is carefully read, followed by selected tales and minor poems. Attention is paid to the etymology of Chaucerian forms, and to comparison of the English of the fourteenth with that of the nineteenth century. As preparation for this course, acquaintance with ancient and modern languages is desirable. An outline of the development of English literature from the beginning until Chaucer's day is given in lectures.

2.—Shakespeare. *Monday, Wednesday, and Friday at 3 (second half-year).* PROFESSOR MAULSBY.

The aim in the study of Shakespeare is first to understand him, then to appreciate his poetic and dramatic workmanship. An outline of the course of our literature from Chaucer to Milton is presented in lectures.

3.—The Classic Period. *Monday, Wednesday, and Friday at 3 (first half-year).* PROFESSOR MAULSBY.

Selected authors from Milton to Johnson are considered, with attempt to note and account for the essential resemblance in their styles. The lyric poets of the period are assigned for individual study. Subjects 1 and 3 are given in alternate years.

4.—The Revolutionary Period. *Monday, Wednesday, and Friday at 9.45 (second half-year).* PROFESSOR MAULSBY.

Selection is made from the following list for treatment in the class-room: Burns, Cowper, Byron, Shelley, Keats, Coleridge, Wordsworth, Landor, Lamb, De Quincey. Each member of the class makes a personal study of some other writer of the period.

5.—Victorian Authors. *Monday, Wednesday, and Friday at 9.45 (first half-year).* PROFESSOR MAULSBY.

The chief emphasis is placed upon Carlyle, Ruskin, Tennyson, and Browning, a part of the work of each being minutely studied, and a greater quantity rapidly read.

[6.—American Literature. *Monday, Wednesday, and Friday at 9.45 (first half-year).* PROFESSOR MAULSBY.]

It is attempted in a single term to outline the history of literature in the United States, from its beginning until now, the less eminent figures being rapidly treated in lectures, in order that the more important names may receive due consideration. Subjects 5 and 6 are given in alternate years.

7.—Study of a Special Topic. *Monday, Wednesday, and Friday at 10.45 (second half-year).* PROFESSOR MAULSBY.

In successive years the following topics are studied: (a) the history of the drama, (b) the principles of literary criticism, (c) the development of the novel, the last of these being assigned for the current year. Unless applicants have studied English literature for at least nine term hours, the permission of the instructor must be obtained in order to take this course.

PHILOSOPHY.

In this department are included Logic, Psychology, Ethics, and Philosophy, strictly so called. The department is not at present organized to offer a major course, but its work is co-ordinated and practically continuous. Consideration is given to Psychology from the standpoint of recent physico-psychological investigation as well as from the philosophical side. In Logic two half-subjects offer opportunity for a study both of deduction and of induction. The work in Philosophy is directed toward a development of the true philosophic spirit and method, and to a survey of the History of Philosophy.

The work in Ethics embraces the study of ethical theory and practice. In addition to recitations from the text-book, students conduct their own investigations, under the direction of the teacher, and embody the results of the same in theses. Considerable time is spent in the discussion of ethical principles, and in the comparison and criticism of modern ethical doctrines.

The study of the Philosophy of Religion begins with a classification of the great questions in Theology, thus giving an out-

line history of doctrines, with emphasis on their logical relations. The next step is the testing of the chief doctrines by known scientific facts. Lastly, the results are arranged on scientific principles. The method includes library work, with references to the writings of the leaders of theological thought in all historic times.

Lectures and criticisms in the class-room supplement the students' personal investigation.

SUBJECTS.

1. — Physical Psychology. *Tuesday, Thursday, and Saturday at 11.45 (first half-year).* PROFESSOR SHIPMAN.

2. — Psychology. Manifestations of Mind through Consciousness. *Tuesday, Thursday, and Saturday at 11.45 (second half-year).*

PROFESSOR SHIPMAN.

The first subject deals with the methods and results of recent psychological investigation, with psychology as a branch of physics; the second presents the subject in its historical relations, studies the manifestations of mind through consciousness, in the manifold products of individual and collective activity, and prepares the way for Philosophy.

3. — Logic, especially Deductive, with an elementary consideration of fallacies. *Tuesday, Thursday, and Saturday at 10.45 (first half-year).* PROFESSOR SHIPMAN.

4. — Logic (advanced course), especially Inductive. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).*

PROFESSOR SHIPMAN.

Much attention is paid to practical exercises. Philosophy 4 is open only to such students as have satisfactorily completed 3. In it fallacies are discussed at much greater length and recent modifications of logical doctrine are examined.

5. — Ethics; Calderwood's Moral Science, with references to Kant's *Metaphysic of Ethics* and Ueberweg's *History of Philosophy*. *Tuesday, Thursday, and Saturday at 10.45 (first half-year).*

PRESIDENT CAPEN.

6. — Practical Ethics. Contemporary Problems, Education, Charities, Temperance, Socialism. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).* PROFESSOR TOUSEY.

Philosophy 6 follows 5 in natural sequence, as the application of ethical theory to the practical questions of the day, but the practical side is not neglected in 5.

7. — Philosophy: its Aim, Method, and History. *Monday, Wednesday, and Friday at 2.* PROFESSOR SHIPMAN.

The discussion includes the problems of philosophy and the spirit in which it should be pursued, and this is followed by specific study of one or more systems and by an outline of the general history of philosophy.

8. — The Philosophy of Religion. *Monday, Wednesday, and Friday at 3 (first half-year).* PROFESSOR KNIGHT.

HISTORY.

MR. START.

The work of this department is so arranged that the student may obtain a general knowledge of the significance, sources, and methods of history, and of the large facts in the development of civilization; passing from this to a more thorough study of limited periods. The essential unity of history is kept constantly in view, as well as the bearing of the experience of the past upon the conditions and problems of to-day, especially in our own country. Much of the instruction is by lectures, but independent work on the part of the student is sought through the study of special topics, references for parallel readings, the requirement of theses, and by general class discussions. The object sought is not so much the accumulation of a great mass of facts, as an adequate comprehension of the meaning of significant historical events, and of the method to be employed in collating and using them.

Collateral subjects for major students in History will be generally in Languages, Political Science, Literature, or Philosophy, according to the needs and purposes of the individual student. Knowledge of the natural sciences, especially of Biology, is a valuable adjunct and may in some cases be required.

SUBJECTS.

1. — Outlines of General History, from the earliest historic period to the present time. Egypt, the old East, Greece, Rome, Mediæval and Modern Europe. Nature, methods, and material of historical science. Lectures, topical work, theses, and discussions. *Tuesday, Thursday, and Saturday at 10.45.* MR. START.

History 1 is introductory to all succeeding subjects in History, and must be taken by students wishing to go on with the latter. It

is intended to give a general knowledge of the nature and progress of civilization, and the means by which it is studied. Complete in itself, it is the foundation for special study of limited periods.

2.—European History since 1648. The political revolution and formation of modern states. Lectures, parallel readings, theses, and topical work. Open to students who have completed History 1. *Monday, Wednesday, and Friday at 10.45 (first half-year).*

MR. START.

4.—American Colonial History. Spain, France, and England in the New World. The formation and social and political life of the colonies. Lectures, parallel readings, theses, and topical work. Open to students who have taken History 1. *Monday, Wednesday, and Friday at 10.45 (second half-year).*

MR. START.

5.—Political and Constitutional History of the United States. The Revolution, formation of the Union, development of the Nation under the Constitution. Lectures, study of sources and literature, theses, and topical work. Open to students who have taken History 1 and 4. *Monday, Wednesday, and Friday at 8.45.*

MR. START.

History 4 and 5 form a connected course in the history of our own country from the opening of the New World to the present time.

6.—European Civilization of the Middle Ages. Church and State, society and thought, in Western Europe to the Reformation. *Tuesday, Thursday, and Saturday at 9.45 (first half-year).*

PROFESSOR KNIGHT.

7.—History of the Reformation to the Peace of Westphalia in 1648. *Tuesday, Thursday, and Saturday at 9.45 (second half-year).*

PROFESSOR KNIGHT.

History 6 and 7 offer a connected study extending through the years of the first sixteen Christian centuries in European civilization. With History 2 they form a study of general European history since the Christian era.

8.—The Comparative History of Religions. Egypt, Babylon, Nineveh; Parseeism, Hinduism, Buddhism, Confucianism, Moham-medanism; with a study of the civilizations represented by these religions. *Tuesday, Thursday, and Saturday at 10.45 (first half-year).*

PROFESSOR KNIGHT.

9.—Seminary in American History. Research work with the sources. Open to major students in History who have completed twelve term hours of work in the department. *Full subject; meetings weekly or fortnightly, at the pleasure of the instructor.*

MR. START.

In the seminary each student becomes an active historical investigator, examining the sources upon which history is based, and ob-

taining by personal experience an insight into the principles of research and criticism. Work of sufficient value done in the seminary will be preserved in the college library.

10.—The History of To-day. Practical work in examining, classifying, and preparing for reading and study the history of the current year. Consideration of principles of criticism, and laws of evidence. *Open only to resident graduates who have taken History 9.*

MR. START.

This subject, for graduate students, is intended to bring to bear the critical faculty and scientific historical principles upon the progress and the questions of to-day, and incidentally to prepare material which may be of value in the study of our history at a later time. Hence it is only offered to graduates who have done special work in History. It may be taken by graduate students from other colleges who have done undergraduate work equivalent to that required of graduates of Tufts College. It is believed that it will be a useful introduction to journalism, law, the Christian ministry, or to a life of public activity, as well as valuable for the historical specialist.

POLITICAL SCIENCE.

PRESIDENT CAPEN.

In this department are included Ancient and International Law and Economics. In the study of Ancient Law the object is, first, to determine the nature of primitive jural conceptions, and, as far as possible, to ascertain how they have arisen and on what they are founded; then, to trace the transformations which these conceptions have undergone, particularly in the Roman jurisprudence and the legal systems that have a Roman root. The effect which legal speculations and doctrines have had, not only upon modes of procedure, but upon civil institutions, political principles, social and domestic life, is carefully studied. International Law follows in the second term. So far as the time allows, a treatment of the subject that is at once broad and practical is sought.

The subject of Political Economy begins with an historical survey, the object being to trace the growth of economic ideas from the beginning, and to note the phases they have assumed among different peoples in the modern world. Then follows a consideration of the fundamental principles of economics. Students are assigned the task of making practical application

of principles to the solution of present economic problems. Time is given to subjects of immediate and living interest, such as the labor question, socialism, the tenure of land, taxation, and finance.

Special work will be arranged in connection with some of the problems of government for those who take Political Science as a major subject, and who have completed 1, 2, and 3.

SUBJECTS.

1.—Political Economy. Lectures on the History of Finance; Methods and Functions of Banking; Taxation, including Principles of Civil Government. Text-book work, lectures, and independent investigation dealing with the History of Economics, Theories of Production, Consumption, Distribution, etc.; Problems of Profits, Wages, and Labor. *Tuesday, Thursday, and Saturday at 8.45.*

PRESIDENT CAPEN.

2.—Ancient Law; Roman Law. Lectures, text-book work, and discussions. *Tuesday, Thursday, and Saturday at 9.45 (first half-year).*

PRESIDENT CAPEN.

3.—International Law. Lectures, text-book work, and discussions. *Tuesday, Thursday, and Saturday at 9.45 (second half-year).*

PRESIDENT CAPEN.

4.—Special work in problems of Government for students electing Political Science as a major subject.

PRESIDENT CAPEN.

MATHEMATICS.

PROFESSOR BROWN.

The study of Mathematics is required through the first year. The branches taught are: Algebra, through the subjects included in most college text-books previous to the theory of equations; Solid and Spherical Geometry; Plane Trigonometry, with its applications. Two objects are kept constantly in view: first, to acquire and hold certain mathematical facts for future use; secondly and mainly, to train the mathematical faculties so that the student may acquire the ability to deduce mathematical truths from those previously established. The class-room work of the instructor is a combination of lectures with questioning of the students to ascertain that the points presented are duly comprehended.

An opportunity to continue the study of Algebra and also a course in Determinants are offered at the middle of the first year. Plane Analytic Geometry is offered as an elective for the first half of the second year. This study may be continued with higher plane curves and Geometry of three dimensions during the second half of the second year. Differential and Integral Calculus is required for three half-years in the Engineering courses, and the subject is open as an elective to any student who has taken Plane Analytic Geometry.

SUBJECTS.

1. — Wells's College Algebra; Baker's Solid Geometry; Hobson and Jessop's Trigonometry; applications of Trigonometry. Required of students in all courses. *Monday, Wednesday, and Friday at 9.45.* PROFESSOR BROWN.

2. — Theory of Equations and Elements of Determinants. *Tuesday, Thursday, and Saturday at 11.45 (second half-year).*

3. — Nichols's Analytic Geometry. *Monday, Wednesday, and Friday at 11.45 (first half-year).* PROFESSOR BROWN.

4. — Higher Plane Curves; Analytic Geometry of Three Dimensions. *Monday, Wednesday, and Friday at 11.45 (second half-year).* PROFESSOR BROWN.

5. — Differential and Integral Calculus, Osborne's. *Tuesday, Thursday, and Saturday at 8.45.* PROFESSOR BROWN.

6. — Differential and Integral Calculus (advanced course). *Monday, Wednesday, and Friday at 10.45.* PROFESSOR BROWN.

7. — Theory of Equations and Determinants; Weld's Theory of Determinants; Hanus's Elements of Determinants. *Monday, Wednesday, and Friday at 10.45.* PROFESSOR BROWN.

PHYSICS.

PROFESSOR DOLBEAR.

The work in Physics begins with a consideration of General Physics, this being the subject to be taken by those electing Physics for their prescribed work in science, and the introductory subject for major students in Physics. A text-book is used, critical comments and much additional material are given, and frequent lectures are given with experiments. The aim is to present the science of Physics not as a series of detached

subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible. Hence in each branch of the subject there are frequent returns to these first principles. The rapid development of electrical science having quite outstripped text-books, this subject is treated wholly by lectures.

An elective course is offered of about twenty-five lectures upon the relations of Physics to other branches of natural science, introducing the doctrine of the conservation of energy as applicable to all. After this follows a more extended consideration of the fundamental questions in Physics. Spencer's First Principles is read, and its subject-matter thoroughly discussed.

In the Physical Laboratory beginners are given Stewart and Gee's Practical Physics, first volume, for a guide. They work for the most part independently, and each pursues a given subject till satisfactory results are obtained. Glazebrook and Shaw's Practical Physics is followed on the subjects of sound, heat, and light; Pickering's Manipulation and Kohlrausch's Measurements being also used to a limited extent. In electricity and magnetism Stewart and Gee's second volume is mainly followed, supplemented, in the case of engineering students, by parts of Gray's Absolute Measurements and Kempe's Testing. In all laboratory work each student records methods and results in a suitable note-book, and is encouraged to do a few things well rather than to go carelessly over a larger ground. Students who are preparing themselves to become teachers of Physics have an opportunity to perform most of the experiments needed for illustrating elementary work.

SUBJECTS.

1.—General Physics. Lectures, recitations, and experiments. To be taken by students choosing Physics for their prescribed science subject, and introductory to other subjects in Physics. *Monday, Wednesday, and Friday at 10.45.* PROFESSOR DOLBEAR.

2.—Electricity and Magnetism; Heat; Light; work in Laboratory. *Tuesday, Thursday, and Saturday at 10.45.* PROFESSOR DOLBEAR.

3.—Advanced Studies in Electricity, Heat, and Light, with experimental work in each. *Monday, Wednesday, and Friday at 9.45.*

PROFESSOR DOLBEAR.

4.—Physical Laboratory. Mechanics and Electricity, Stewart and Gee; Sound, Heat, and Light, Glazebrook and Shaw. *Monday, Wednesday, and Friday from 2 to 4.* PROFESSOR HOOPER.

5.—Physical Laboratory (advanced course). Mechanics and Electricity, Stewart and Gee; Electrical Testing, Kempe; Absolute Measurement, Gray. *Monday, Wednesday, and Friday from 2 to 4.* PROFESSOR HOOPER.

6.—Electricity. Thompson's Dynamos; Kapp's Electrical Transmission of Energy. Recitations and lectures. *Monday, Wednesday, and Friday at 11.45.* PROFESSOR HOOPER.

7.—Philosophy of Physics. Lectures. *Tuesday and Thursday at 2 (first half-year).* PROFESSOR DOLBEAR.

8.—Spencer's First Principles. *Tuesday and Thursday at 2 (second half-year).* PROFESSOR DOLBEAR.

CHEMISTRY.

MR. DURKEE.

The work in Chemistry begins with the subject of General Chemistry, which is open to the students in the courses in Liberal Arts, and is required of engineering students in their third year. Instruction in this subject is given by means of lectures, recitations, and laboratory work. The lectures, which are illustrated by experiments, are intended to cover the ground of theoretical and descriptive inorganic chemistry, and to give the student a thorough knowledge of chemical theories and of the more important chemical elements and their compounds. Many of the methods for manufacturing chemical products for the market are carefully considered. The laboratory work occupies one half of the time allotted to General Chemistry. Each student has ample opportunity to test experimentally the truth of chemical theories, and to become familiar with chemical substances and their behavior. In all this work the note-book plays an important part. The note-books are inspected once a week by the instructor. By careful personal attention to each student purely mechanical work is avoided. Brief recitations are held before each lecture, and these recitations are supplemented by frequent written examinations. Remsen's text-books are used as books of reference. For those who may wish to pursue the course further four

subjects are offered. These subjects are conducted almost wholly by means of laboratory work. The design is to give the student a complete and practical training in all the common methods of analysis, so that he may be fitted to undertake successfully any variety of analytical work. The course in Organic Chemistry consists of a series of lectures on the various classes of organic compounds, together with laboratory work, to illustrate the methods of synthesis and analysis of these compounds.

SUBJECTS.

1.—General Chemistry. Lectures, recitations, and laboratory work. *Monday at 2; laboratory, Wednesday and Friday from 2 to 4.*

MR. DURKEE.

2.—Qualitative Analysis; Basic and Acid Analysis; Analysis of Salts and Natural Products. *Laboratory, Tuesday and Thursday from 2 to 5.*

MR. DURKEE.

3.—Quantitative Analysis; Gravimetric and Volumetric Analysis; Analysis of Ores. *Laboratory, Tuesday and Thursday from 2 to 5.*

MR. DURKEE.

4.—Quantitative Analysis (advanced course); Analysis of Water, Food Products, etc. *Laboratory, Tuesday and Thursday from 2 to 5.*

MR. DURKEE.

5.—Organic Chemistry. Lectures, recitations, and laboratory work. (*Second half-year.*)

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BIOLOGY.

PROFESSOR KINGSLEY.

The work in Biology begins with the general study of the structure and physiology of selected types of animals and plants. This course is required of all students electing work in the biological department. After this course, work is outlined for the students according to their need and desires. Botany and Zoölogy are taught as continuations of the course in General Biology, while the work in Physiology, Histology, and Embryology is intended as preparatory to a medical education. Instruction is given by lectures and by laboratory work, the object being to impart the scientific method rather than a large number of unimportant facts. Provision is also

made for more extended study and for original investigation, and students will be encouraged to continue their work in this department by means of research on special problems. The equipment of the department is good, including microscopes, microtomes, reagents, preparations for the microscope, diagrams, as well as abundant material for illustration and dissection. There is also a department library, while proximity to Boston and Cambridge gives easy access to abundant library facilities.

SUBJECTS.

1.—General Biology. *Lectures, Tuesday and Thursday at 11.45; laboratory, Tuesday and Thursday from 2 to 4.*

PROFESSOR KINGSLEY.

This subject is required of all students taking Biology for their prescribed work in science, and is introductory to all other subjects in Biology.

2.—Elementary Physiology. *Lectures, demonstrations, and recitations. Tuesday, Thursday, and Saturday, at 8.45 (first half-year).*

PROFESSOR KINGSLEY.

This subject is offered as a collateral and elective only.

3.—Comparative Anatomy of Animals; a continuation of the animal dissection of Biology 1. Six hours of laboratory work. *Monday, Wednesday, and Friday from 2 to 4 (first half-year).*

PROFESSOR KINGSLEY.

4.—Botany; a continuation of the study of plants of Biology 1. Six hours of laboratory work. *Monday, Wednesday, and Friday from 2 to 4 (second half-year).*

PROFESSOR KINGSLEY.

5.—Histology; a study of the normal tissues of the vertebrates, including microscopical technique. One lecture and four hours of laboratory work. *Hours to be arranged by the instructor.*

PROFESSOR KINGSLEY.

6.—Embryology. One lecture and four hours of laboratory work. *Hours to be arranged by the instructor.*

PROFESSOR KINGSLEY.

7.—The History of Zoölogy. One lecture a week for the first half-year.

PROFESSOR KINGSLEY.

This course of lectures, given in the evening, is open to the public, and is intended to outline the history of our knowledge of the animal kingdom and to include the elements of the various theories connected with the organic world. Attendance on this course does not count toward a degree.

8.—Special Work. Six hours of laboratory work for the year in the investigation of some special problem.

PROFESSOR KINGSLEY.

9. — General Morphology. Three lectures each week upon the anatomy, physiology, and embryology of selected groups, with discussion of special problems. Open only to advanced students. *Tuesday, Thursday, and Saturday at 8.45 (second half-year).*

PROFESSOR KINGSLEY.

GEOLOGY.

PROFESSOR MARSHALL.

The regular course in Geology is preceded by a course in Mineralogy, given during the first half-year. The instruction is given by lectures and practical work in the mineralogical laboratory, which is furnished with the apparatus needed for the qualitative determination of minerals and the quantitative analysis of the ores of the precious metals. A good collection of minerals, systematically arranged in wall-cases, is accessible to the student for practical use, while a much larger collection of finer specimens on exhibition in the Museum may also be consulted.

The course in Descriptive Geology given during the second half-year presupposes a knowledge of mineralogy, and is given by means of text-books and lectures, illustrated by models, charts, maps, and drawings upon the blackboard. Soon after beginning the course practical work in Lithology is taken up, by which the student becomes familiar with the constituents of the common rocks. A spectroscope, a lithological microscope, and rock-sectioning apparatus are provided, for a more thorough examination of rocks and minerals. The subject of Palæontology is taken up in the latter part of the course, and illustrated by a systematic collection of fossils in the Museum. Excursions to various localities in the neighborhood are offered the students, where the more common geological phenomena can be profitably studied *in situ*.

SUBJECTS.

1. — Mineralogy; Blow-pipe Analysis. *Tuesday, Thursday, and Saturday at 9.45 (first half-year).*

PROFESSOR MARSHALL.

2. — Geology, Lithology, and Palæontology. Lectures, recitations, and laboratory work. *Tuesday, Thursday, and Saturday at 9.45. (second half-year).*

PROFESSOR MARSHALL

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ASTRONOMY.

1. — Recitations and Lectures, chiefly on Physical and Descriptive Astronomy, with special attention to the later discoveries, and their interpretation as bearing upon the history of the earth. *Tuesday and Thursday at 11.45 (first half-year).* PROFESSOR DOLBEAR.

DRAWING.

PROFESSOR ANTHONY.

The object of the studies pursued in this department is three-fold: first, a development of the theory of technical drawing; second, the acquirement of precision and rapidity in the execution of the work; third, a practical application of these principles to the fluent expression of mechanical ideas by means of graphic language. Practice in the attainment of the first is acquired by Freehand and Geometric Drawing and the study of Descriptive Geometry. By means of progressive problems, in which nothing in the nature of a copy is permitted, the student is advanced to the consideration of point, line, and surface from a purely analytic standpoint. The instruction in Descriptive Geometry is given by means of lectures and recitations, accompanied by frequent examinations in the freehand and instrumental construction of the problems. Rapidity of work being attained only through precision, drawings are required to be executed with the greatest possible care and neatness. The theory and execution of a drawing having been mastered, the student is directed to make such applications of these principles to the illustration of mechanism as shall enable him graphically to express his ideas in the most simple and direct manner. The machine drawings are made by such systems as would be required in any well-conducted drafting-room, and the most modern methods are employed in the execution of the work and in the forms of graphic expression that may be used.

SUBJECTS.

1. — Descriptive Geometry. Lectures, recitations, and drawing. *Four hours a week (second half-year).*

PROFESSOR ANTHONY, MR. DANIELS.

2.—Mechanical Drawing. (See Engineering Courses.) *Three hours a week for the year.* PROFESSOR ANTHONY, MR. DANIELS.

3.—Machine Drawing; Gearing, Elements of Design. *Two hours a week for the year.* PROFESSOR ANTHONY.

4.—Freehand Drawing. *Two hours a week (first half-year).* MR. DANIELS.

5.—Topographical Drawing, with Field Work, Chain, Compass, Level, and Transit. *Three hours a week for the year.* MR. DANIELS.

ENGINEERING.

PROFESSOR BRAY.

There are offered in this department such selected subjects from the Engineering Courses as may be profitably pursued by students in the courses in Liberal Arts, who have taken the necessary preliminary work in Mathematics, and who may desire to shape their work with reference to pursuing study in Engineering after graduation. Such students will also find subjects adapted to their plans in the departments of Mathematics, Physics, Chemistry, and Drawing. Fuller details of the work in Engineering will be found in the statement of the full Engineering Courses. For all the subjects given below, Algebra, Geometry, and Trigonometry are an indispensable preparation.

SUBJECTS.

1.—Surveying. Lectures and recitations. *Two hours a week for the year.* MR. DANIELS.

2.—Applied Mechanics. *Four hours a week for the year.* PROFESSOR BRAY.

In addition to the Mathematics required by way of preparation for other subjects in Engineering, students electing Engineering 2 must have taken Calculus.

3.—Steam Engineering, Theory and Construction. *Four hours a week (second half-year).* PROFESSOR BRAY.

This requires as preparation the ordinary Mathematics, Calculus, the Physics and Mechanics of the preceding half-year (see Civil Engineering Course), and may be taken simultaneously with the Calculus and Mechanics of the second half of the third year of the Civil Engineering Course.

4.—Civil Engineering. *Four hours a week for the year.*

PROFESSOR BRAY.

5.—Road Engineering. *Three hours a week (first half-year); two hours a week (second half-year).*

PROFESSOR BRAY.

Engineering 4 and 5 must be preceded by the Mathematics and Mechanics of the first three years of the Civil Engineering Course.

6.—Marine Engineering. *Four hours a week (first half-year).*

PROFESSOR BRAY.

This subject is open to students who have taken the Drawing, Mathematics, Mechanics, and Steam Engineering of the Engineering Course.

7.—Marine Architecture and Shipbuilding. *For graduates of the Engineering Course only.*

PROFESSOR BRAY.

PHYSICAL TRAINING.

MR. DURKEE.

Regular exercise in the gymnasium is required three hours a week of men students for the two years following entrance, from the middle of November to the middle of March. The work in physical training is optional during the remaining years of the course. The kind of exercise prescribed for each man depends on his physical condition, as determined by careful medical examination, measurements, and strength tests. The special exercises of each student are directed by the instructor; the general exercises are in classes. The class work consists of free movements, exercises with wands and light dumb-bells, and on the parallel bars, vaulting-bar, and vaulting-horse. It is the intention in all cases to make the exercises of such a character that the weakest as well as the strongest person can perform them with profit.

Program Groups

FOR 1894-95.

The arrangement of recitation hours for the college year 1894-95 is given in the subjoined table. No student is allowed to take more than one subject in any of these groups, except in the case of half-subjects that are not given in the same half-year. Such subjects are indicated by the small roman numerals (i) or (ii) following the name of the subject and showing the half-year in which it is given. The days of the week are indicated by the abbreviations M., Tu., W., Th., F., and S.

(M. W. F. at 8.45.) French 2. French 3. History 5.	(M. W. F. at 3.) Greek 1. French 4. English Lit. 2 (ii). English Lit. 3 (i). Philosophy 8. Chemistry 1 (lab. W. F.). Physics 4 and 5 (lab.). Biology 3, 4, 5, 6, 8 (lab.).	(Tu. Th. S. at 10.45.) Latin 1. Italian. Philosophy 3 (i). Philosophy 4 (ii). Philosophy 5 (i). Philosophy 6 (ii). History 1. History 8 (i). Physics 2.
(M. W. F. at 9.45.) German 2. English Lit. 4 (ii). English Lit. 5 (i). Mathematics 1. Physics 3.	(M. W. F. at 4.) Greek 8. Physical Training (Nov. 15 to March 15).	(Tu. Th. S. at 11.45.) Greek 3. German 3: Philosophy 1 (i). Philosophy 2 (ii). Mathematics 2 (ii). Biology 1 (Tu., Th.). Oratory 1. Astronomy.
(M. W. F. at 10.45.) English 2 (i). English 3 (ii). English 8 (i). English Lit. 7 (ii). History 4 (ii). Mathematics 6. Mathematics 7. Physics 1. German 5.	(Tu. Th. S. at 8.45.) English 4 (i). English 5 (ii). French 1a. German 1a. Latin 4. Greek 7. Political Science 1. Mathematics 5. Biology 2 (i). Biology 9 (ii).	(Tu. Th. S. at 2.) English 1 (Tu.). Oratory 2. Physics 7 (i). Physics 8 (ii). Chemistry 2, 3, 4 (lab.). Biology 1 (lab.).
(M. W. F. at 11.45.) English 6 (i). English 7 (ii). Latin 2. German 4. Mathematics 3 (i). Mathematics 4 (ii). Physics 6.	(Tu. Th. S. at 9.45.) Latin 3. Greek 1. Greek 5. French 1b. German 1b. History 6 (i). History 7 (ii). Political Science 2 (i). Political Science 3 (ii). Geology 1 (i). Geology 2 (ii).	(Tu. Th. S. at 3.) Chemistry 2, 3, 4 (lab.). Biology 1 (lab.). Hebrew 2.
(M. W. F. at 2.) Greek 2. Greek 6. Philosophy 7. Chemistry 1 (lect. M. lab. W. F.). Physics 4 and 5 (lab.). Biology 3, 4, 5, 6, 8 (lab.).		(Tu. Th. S. at 4.) Latin 7. Chemistry 2, 3, 4 (lab.).

There are no college exercises on Saturday afternoon.

Engineering Courses.

Two courses in Engineering are provided, each occupying four years. The course in Electrical Engineering leads to the degree of Bachelor of Electrical Engineering, which is granted after the satisfactory completion of the work prescribed. The degree of Bachelor of Civil Engineering is given on the same conditions to students who have pursued the course in Civil Engineering. It is believed that four years, spent mainly upon technical subjects, yet providing opportunity for such language study as will enable the student to become familiar with foreign books of scientific value, will furnish a solid foundation for advanced theoretical attainment and professional skill.

Students of the Courses in Liberal Arts may so arrange their elective work as to make it possible to obtain either of the degrees mentioned above upon the completion of one year's graduate study.

ELECTRICAL ENGINEERING.

The aim of the course in this department, leading to the degree of Bachelor of Electrical Engineering, is to fit men to deal intelligently with all electrical problems likely to be presented to the practical engineer. With this end in view, Mathematics and Drawing are pursued through nearly the entire course. Physics and Mechanics, both pure and applied, receive much attention, while more than half of the fourth year is devoted to the study of Electricity, by means of practical work in the electrical laboratory, together with recitations and lectures on the principles involved. The purely electrical work extends over the Junior and Senior years of the course; the Junior year being devoted to the more elementary theory and the practice of the simpler tests and measurements; the Senior year to the more advanced theory and the practice of the more complex tests and measurements.

The electrical laboratory is open to students at all hours of the day, and each student is required to complete a fixed programme of work. In the Junior year this consists of the work indicated in Stewart and Gee's Practical Physics, Vol. II. In the Senior year it includes among other things: the photometry of arc and incandescent lamps; the magnetic properties of the various irons; insulation and conductivity tests; efficiencies, characteristic curves, and magnetic leakage of various dynamos and motors; efficiency, capacity, etc., of accumulators; preparation of thesis.

The laboratory is well equipped with testing instruments, including the various types of ammeters, voltmeters, reflecting galvanometers, resistance boxes; standards of electromotive force, resistance, and capacity; Thomson's standard balances; electro-dynamometer, etc. The more delicate instruments are provided with substantial brick piers to prevent vibration.

The dynamo room is equipped with a Sturtevant engine of twenty-five horse-power and six dynamos, and is provided with counter-shafts, dynamometers, tachometer, etc. A sixty-thousand watt hour storage battery furnishes ample power for all work at any time when the dynamos are not running.

The electrical workshop possesses a fine outfit of machine tools, including planer, shaper, drill, universal milling machine, engine lathes, speed lathes, turret lathe, and grinder. Here is constructed by students much of the apparatus in daily use in the laboratory.

Graduates of this course may obtain the degree of Electrical Engineer after satisfying certain conditions. (See page 92.) The plan of the course is as follows:—

FRESHMAN YEAR.

First Term.

Mathematics.—Advanced Algebra; Spherical Geometry; Plane Trigonometry. *Six hours a week.* MR. SANBORN, MR. MYRICK.

Mechanical Drawing.—Geometric Drawing; Orthographic Projection; Lettering. *Three hours a week.*

PROFESSOR ANTHONY, MR. DANIELS.

Freehand Drawing. — Models, Casts, Technical Sketching, etc.
Two hours a week. MR. DANIELS.

Shop Work. — Woodwork; Carpentry; Pattern-Making; Turning.
Two hours a week. (See note.¹)

Rhetoric. — Extemporaneous Composition. *Two hours a week.*
 PROFESSOR SHIPMAN.

French. — Edgren's Grammar; Super's French Reader. *Four hours a week.* MR. LEWIS.

or,

German. — Joynes-Meissner, Grammar; Bernhardt, Im Zwielficht, II.
Four hours a week. PROFESSOR FAY.

Second Term.

Mathematics. — Spherical Trigonometry; Physical Arithmetic. *Four hours a week.* MR. SANBORN, MR. MYRICK.

Descriptive Geometry. — Problems of Points, Lines, and Planes; Tangencies; Intersections; Elements of Perspective. Lectures and recitations. *Four hours a week.*

PROFESSOR ANTHONY, MR. DANIELS.

Mechanical Drawing. — Orthographic Projection; Screw Threads, Bolts and Nuts; Tracing and Blue-printing. *Three hours a week.*

PROFESSOR ANTHONY, MR. DANIELS.

Mechanics. — Lectures. *Three hours a week.* PROFESSOR HOOPER.

Rhetoric. — Extemporaneous Composition. *One hour a week.*
 PROFESSOR SHIPMAN.

French. — Mérimée, Colomba; Sandeau, Mademoiselle de la Seiglière (the play); Grammar and Composition. *Three hours a week.*

MR. LEWIS.

or,

German. — Riehl, Der Fluch der Schönheit; Freytag, Aus dem Staat Friedrichs des Grossen; Composition. *Three hours a week.*

PROFESSOR FAY.

SOPHOMORE YEAR.

First Term.

Mathematics. — Analytic Geometry. *Four hours a week.*
 MR. SANBORN.

Physics. — Properties of Matter; Heat; Light; Daniell's Principles of Physics. *Three hours a week.* PROFESSOR DOLBEAR.

¹ Instruction in Shop Work is given at the Bromfield-Pearson School.

Elements of Mechanism.—Construction of Cams; Linkwork; Gears, etc. *One hour a week.* MR. SANBORN.

Drawing.—Machine Drawing. *Two hours a week.* PROFESSOR ANTHONY.

French.—Readings from French History (Super's collection); H. Martin, Jeanne Darc; Racine, Athalie. *Three hours a week.* MR. LEWIS.

or,

German.—Lessing, Minna von Barnhelm; Schiller, Wilhelm Tell; Wieland, Oberon; Grammar and Composition. *Three hours a week.* PROFESSOR FAY.

ELECTIVE.—In addition to the above, one of the following elective studies:—

English Literature.—1840 to the present time. *Three hours a week.* PROFESSOR MAULSBY.

Rhetoric.—Carpenter's; Themes; Extemporaneous Composition. *Three hours a week.* PROFESSOR SHIPMAN.

Second Term.

Mathematics.—Differential and Integral Calculus. *Three hours a week.* PROFESSOR BROWN.

Physics.—Sound; Electricity; Daniell's Principles of Physics. *Three hours a week.* PROFESSOR DOLBEAR.

Physical Laboratory.—Mechanics; Sound, Heat, and Light. *Three hours a week.* MR. MYRICK.

Shop Work.—Blacksmithing; Forging of Iron and Steel. *Two hours a week.* (See note, page 64.)

Drawing.—Machine Drawing. *Two hours a week.* PROFESSOR ANTHONY.

French.—Molière, L'Avare; Corneille, Polyeucte; George Sand, Les Maîtres Mosaïstes; two essays in French. *Three hours a week.* MR. LEWIS.

or,

German.—Heine, Die Harzreise; Müller, Geschichte des deutschen Volkes, §§ 532 ff. (Struggle against the French Revolution); Goethe, Hermann und Dorothea; one essay in German. *Three hours a week.* PROFESSOR FAY.

JUNIOR YEAR.

First Term.

Mathematics.—Differential and Integral Calculus (advanced course). *Three hours a week.* PROFESSOR BROWN.

Mechanics.—Applied Mechanics. *Four hours a week.* PROFESSOR BRAY.

Chemistry.—Inorganic Chemistry, with Recitations, Lectures, and Laboratory Work. *Four hours a week.* MR. DURKEE.

Electricity.—Units; Theory of Measurements; Electrical Calculations; Recitations and Lectures. *Two hours a week.* MR. MYRICK.

Physical Laboratory.—Magnetic and Electrical Measurements; Construction of Apparatus; Recitations and Lectures. *Two hours a week.* MR. MYRICK.

Drawing.—Advanced Machine Drawing; Elements of Design. *One and a half hours a week.* PROFESSOR ANTHONY.

Shop Work.—Chipping; Filing; Polishing; Bolt Cutting; Tapping; Turning; Boring, etc. *One and a half hours a week.* (See note, page 64.)

Second Term.

Mathematics.—Differential and Integral Calculus (advanced course). *Three hours a week.* PROFESSOR BROWN.

Mechanics.—Applied Mechanics. *Four hours a week.* PROFESSOR BRAY.

Steam Engineering.—Description of Types of Engines and Boilers; Theory and Construction of Details; Dimensions for Required Power; Steam Engine Indicators; Calorimeters; Valve Gears and their Adjustment. *Four hours a week.* PROFESSOR BRAY.

Electricity.—Theory of Measurements; Electrical Calculations; Wiring; Recitations and Lectures. *Two hours a week.* MR. MYRICK.

Physical Laboratory.—Magnetic and Electrical Measurements; Construction of Apparatus. *Two hours a week.* MR. MYRICK.

Drawing.—Boiler and Steam Engine Details. *One and a half hours a week.* PROFESSOR ANTHONY.

SENIOR YEAR.

First Term.

Mathematics. — Theory of Least Squares. *Two hours a week.*

PROFESSOR BROWN.

Kinematics of Machines. — General Theory of Machines; Theory of Prime Movers; Construction and Location of Machines; Designs and Reviews of Special Machines. *Two hours a week.*

PROFESSOR BRAY.

Electricity. — Thompson's Dynamo Electric Machinery; Kapp's Electrical Transmission of Energy; Systems of Lighting; Lectures and Recitations. *Four hours a week.*

PROFESSOR HOOPER.

Electrical Laboratory. — Management of Electrical Machinery; Dynamo Testing; Accumulators; Photometry of Arc and Incandescent Lamps; Testing of Lines and Conductors.

PROFESSOR HOOPER.

Drawing. — Machine Designing. *Three hours a week.*

PROFESSOR ANTHONY.

English Composition. — *One hour a week.* PROFESSOR SHIPMAN.

Second Term.

Electricity. — Fleming's Induction of Currents; Design of Dynamos; Electrical Railways; Recitations and Lectures. *Four hours a week.*

PROFESSOR HOOPER.

Electrical Laboratory. — Construction of Electrical Machinery; Special Investigations.

PROFESSOR HOOPER.

Technical Applications of Electricity. — Lectures on Telegraph. Telephone, Electro-Metallurgy, etc. *Two hours a week.*

PROFESSOR DOLBEAR,

Political Economy. — History of Finance; Banking; Taxation; Principles of Civil Government; Theories of Production, Consumption, Distribution, etc.; Problems of Profits, Wages, and Labor. *Three hours a week.*

PRESIDENT CAPEN.

English Composition. — *One hour a week.* PROFESSOR SHIPMAN.

Preparation of Thesis.

CIVIL ENGINEERING.

The course of study in this department, leading to the degree of Bachelor of Civil Engineering, has been arranged with reference to its disciplinary and educational value, as well as to the general and technical knowledge which it imparts, and has constantly in view the training of competent designers and constructors. Instruction is given by means of text-books and lectures, laboratory work, and practice in the drafting-room and in the field.

In Surveying, the use and adjustment of instruments are taught by work in the field, so that students become familiar with the methods of land, topographical, city, railroad, and mine surveying.

The work in the drafting-room begins with plane geometrical problems, freehand drawing, and lettering; followed by mechanical drawing, problems in descriptive geometry, shades and shadows, plotting from field notes of actual surveys, topographical drawing, and map-making. The production of finished plans is required; also the drawing of details of engineering structures and machines necessary for the construction of railroads, sewer systems, steam and electric plants.

The course in Road Engineering includes study in the classroom of the principles governing the economical location of railroads and highways, as well as consideration of the cost of their construction, maintenance, and operation. The field-work embraces the survey and location of a line of railroad, and includes setting slope-stakes, locating turnouts, culverts, and bridges, with the preparation of specifications and estimates.

In Descriptive Geometry the instruction is given by means of text-books and lectures, illustrated by diagrams and models. The problems are worked out upon the blackboard, and many original questions are added, to make the student thoroughly familiar with this branch of mathematics.

Instruction in the Steam Engine is given by means of text-books, lectures, drawings, and practice with engines and boilers. Frequent reference is made to modern examples of

engines and boilers of various kinds. Students have practice in applying the steam indicator for the determination of the power developed by the engine.

In Applied Mechanics the student is taught to design structures and machines, beginning with the study of forces, centre of gravity, moment of inertia, determination of stresses in frames and trusses, including investigation of the strength and elasticity of materials, theoretically in the class-room, and experimentally in the testing laboratory. A ready knowledge of mathematics is essential in this department, since frequent use is made of analytic geometry, trigonometry, and the calculus.

The subject of Construction is taught by recitations, lectures, laboratory work, and by the study of approved examples and reports of engineers and inspectors of work under construction. Investigation is made of the characteristic properties, strength and durability of natural and artificial building materials. The appliances and machinery required in the construction of walls, dams, piers and abutments, arches and tunnels, are considered, and the student is made familiar with the methods of constructing foundations on land and under water, and the uses of piles of various kinds.

The work in Hydraulics embraces theoretical and experimental or applied hydraulics. Numerous problems are solved by the student, requiring the application of formulæ to cases of frequent occurrence in practice. A study is made of the published reports of engineers upon the experimental determination of the flow in conduits and sewers.

The instruction in Bridge Designing is based upon the analytic and graphic computation of stresses, as taken up in Applied Mechanics. The principles therein developed through the study of the strength and elasticity of materials are applied to computation for determining the several parts of highway and railroad bridges.

Graduates of this course may obtain the degree of Civil Engineer on complying with the requirements stated under the Graduate Department, page 92. The plan of the course is as follows : —

FRESHMAN YEAR.

First Year.

Mathematics. — Advanced Algebra; Spherical Geometry; Plane Trigonometry. *Six hours a week.* MR. SANBORN.

Mechanical Drawing. — Geometric Drawing; Orthographic Projection; Lettering. *Three hours a week.*

PROFESSOR ANTHONY, MR. DANIELS.

Freehand Drawing. — Models, Casts, Technical Sketching. *Two hours a week.* MR. DANIELS.

Shop Work. — Woodwork; Carpentry; Pattern-Making; Turning. *Two hours a week.* (See note, page 64.)

Rhetoric. — Extemporaneous Composition. *Two hours a week.*

PROFESSOR SHIPMAN.

French. — Edgren's Grammar; Super's French Reader. *Four hours a week.* MR. LEWIS.

or,

German. — Joynes-Meissner, Grammar; Bernhardt, Im Zwielficht, II. *Four hours a week.* PROFESSOR FAY.

Second Term.

Mathematics. — Spherical Trigonometry; Physical Arithmetic. *Four hours a week.* MR. SANBORN.

Descriptive Geometry. — Problems of Points, Lines, and Planes; Tangencies; Intersections; Elements of Perspective. Lectures and recitations. *Four hours a week.*

PROFESSOR ANTHONY, MR. DANIELS.

Mechanical Drawing. — Orthographic Projection; Screw Threads, Bolts and Nuts; Tracing and Blue-printing. *Three hours a week.*

PROFESSOR ANTHONY, MR. DANIELS.

Mechanics. — Lectures. *Three hours a week.* PROFESSOR HOOPER.

Rhetoric. — Extemporaneous Composition. *One hour a week.*

PROFESSOR SHIPMAN.

French. — Mérimée, Colomba; Sandeau, Mademoiselle de la Seiglière (the play); Grammar and Composition. *Three hours a week.*

MR. LEWIS.

or,

German. — Riehl, Der Fluch der Schönheit; Freytag, Aus dem Staat Friedrichs des Grossen; Composition. *Three hours a week.*

PROFESSOR FAY.

SOPHOMORE YEAR.

First Term.

Mathematics. — Analytic Geometry. *Four hours a week.*

MR. SANBORN.

Physics. — Properties of Matter; Heat; Light; Daniell's Principles of Physics. *Three hours a week.*

PROFESSOR DOLBEAR.

Surveying. — Principles of Land Surveying; Use and Construction of Instruments. Lectures and recitations. *Two hours a week.*

MR. DANIELS.

Field Work. — Work with Chain, Compass, and Transit. *One and a half hours a week.*

MR. DANIELS.

Drawing. — Plotting. *One and a half hours a week.*

MR. DANIELS.

French. — Readings from French History (Super's collection); H. Martin, Jeanne Darc; Racine, Athalie. *Three hours a week.*

MR. LEWIS.

or,

German. — Lessing, Minna von Barnhelm; Schiller, Wilhelm Tell; Wieland, Oberon; Grammar and Composition. *Three hours a week.*

PROFESSOR FAY.

ELECTIVE. — In addition to the above, one of the following elective studies: —

English Literature. *Three hours a week.*

PROFESSOR MAULSBY.

Rhetoric. — Carpenter's; Themes; Extemporaneous Composition. *Three hours a week.*

PROFESSOR SHIPMAN.

Second Term.

Mathematics. — Differential and Integral Calculus. *Three hours a week.*

PROFESSOR BROWN.

Physics. — Sound; Electricity; Daniell's Principles of Physics. *Three hours a week.*

PROFESSOR DOLBEAR.

Mathematical Astronomy. — *Two hours a week.*

PROFESSOR BROWN.

Surveying. — Topographical, Mine, Hydrographic, and Railroad Surveying. Lectures and recitations. *Two hours a week.*

MR. DANIELS.

Drawing. — Plotting and Topographical Drawing; Sketching and Brush Shading. *One and a half hours a week.*

MR. DANIELS.

Field Work. — Work with Transit and Level. *One and a half hours a week.* MR. DANIELS.

Shop Work. — Blacksmithing; Forging of Iron and Steel. *Two hours a week.* (See note, page 64.)

French. — Molière, L'Avare; Corneille, Polyeucte; George Sand, Les Maîtres Mosaïstes; two essays in French. *Three hours a week.* MR. LEWIS.

or,

German. — Heine, Die Harzreise; Müller, Geschichte des deutschen Volkes, §§ 532 ff. (Struggle against the French Revolution); Goethe, Hermann und Dorothea; one essay in German. *Three hours a week.* PROFESSOR FAY.

JUNIOR YEAR.

First Term.

Mathematics. — Differential and Integral Calculus (advanced course). *Three hours a week.* PROFESSOR BROWN.

Mechanics. — Applied Mechanics. *Four hours a week.* PROFESSOR BRAY.

Chemistry. — Inorganic Chemistry, with Recitations, Lectures, and Laboratory Work. *Four hours a week.* MR. DURKEE.

Drawing. — Topographical Drawing. *One and a half hours a week.* MR. DANIELS.

Field Work. — Work with Plane Table and Stadia. *One and a half hours a week.* MR. DANIELS.

OPTION.¹ — Electricity. — Units; Theory of Measurements; Electrical Calculations. *Two hours a week.* PROFESSOR HOOPER.

or,

Geology. — Descriptive and Practical Geology. *Two hours a week.* PROFESSOR MARSHALL.

Second Term.

Mathematics. — Differential and Integral Calculus (advanced course). *Three hours a week.* PROFESSOR BROWN.

Mechanics. — Applied Mechanics. *Four hours a week.* PROFESSOR BRAY.

¹ Students electing Electricity in the Junior year will continue that subject in the Senior year; and those electing Geology and Chemistry in the Junior year will continue Chemistry.

Steam Engineering. — Description of Types of Engines and Boilers; Theory and Construction of Details; Dimensions for Required Power; Steam Engine Indicators; Calorimeters; Valve Gears and their Adjustment. *Four hours a week.* PROFESSOR BRAY.

Drawing. — Machine Designing. *Three hours a week.*

PROFESSOR ANTHONY.

OPTION. — Electricity. — Theory of Measurements; Electrical Calculations; Wiring. *Two hours a week.* PROFESSOR HOOPER.

or,

Chemistry. — Basic Qualitative Analysis; Lectures and Laboratory Work. *Three hours a week.* MR. DURKEE.

SENIOR YEAR.

First Term.

Mathematics. — Theory of Least Squares. *Two hours a week.*

PROFESSOR BROWN.

Civil Engineering. — Strength of Materials; Laboratory Work with Testing Machine; Stability of Structures of Stone, Wood, and Iron. *Four hours a week.*

PROFESSOR BRAY.

Road Engineering. — Railways and Highways. Lectures and recitations. *Three hours a week.*

PROFESSOR BRAY.

Drawing. — Stereotomy. *One and a half hours a week.*

MR. DANIELS.

Field Work. — Location of Roads and Railroads. *One and a half hours a week.*

MR. DANIELS.

English Composition. — *One hour a week.* PROFESSOR SHIPMAN.

OPTION. — Electricity. — Thompson's Dynamo-Electric Machinery; Kapp's Transmission of Energy; Systems of Lighting. Recitations and lectures. *Four hours a week.* PROFESSOR HOOPER.

or,

Chemistry. — Qualitative Analysis, continued. Acid Analysis; Analysis of Salts and Natural Products. *Three hours a week.*

MR. DURKEE.

Second Term.

Civil Engineering. — Bridge and Roof Building; Drainage and Sewerage; Hydraulics; Masonry Construction. *Four hours a week.*

PROFESSOR BRAY.

Road Engineering. — Economic Considerations, with Designing of Mechanical Structures. *Two hours a week.* PROFESSOR BRAY.

Drawing. — Bridges and Roof Trusses; Water Works and Sewerage Systems. *Two hours a week.* MR. DANIELS.

Political Economy. — History of Finance; Banking; Taxation; Principles of Civil Government; Theories of Production, Consumption, Distribution, etc.; Problems of Profits, Wages, and Labor. *Three hours a week.* PRESIDENT CAPEN.

English Composition. — *One hour a week.* PROFESSOR SHIPMAN.

OPTION. — Electricity. — Fleming's Induction of Currents; Design of Dynamos; Electrical Railways. Recitations and lectures. *Four hours a week.* PROFESSOR HOOPER.

or,

Chemistry. — Quantitative Analysis, Gravimetric and Volumetric. *Four hours a week.* MR. DURKEE.

Preparation of Thesis.

TABULAR VIEW OF ENGINEERING COURSES.

FRESHMAN YEAR.		SOPHOMORE YEAR.		JUNIOR YEAR.		SENIOR YEAR.	
First Half.	Second Half.	First Half.	Second Half.	First Half.	Second Half.	First Half.	Second Half.

ELECTRICAL — B. E. E.

Mathematics. Mechan. Draw'g. Freehand Draw- ing.	Mathematics. Descriptive Geometry. Mechan. Draw'g. Physics. Rhetoric. French (or German).	Mathematics. Physics. Elements of Mechanism. Drawing. German (or French).	Mathematics. Physics. Physical Lab'y. Shop Work. Drawing. German (or French).	Mathematics. Mechanics. Chemistry. Electricity. Physical Lab'y. Drawing. Shop Work.	Mathematics. Mechanics. Steam Engineer- ing. Electricity. Physical Lab'y. Drawing.	Mathematics. Kinematics of Machines. Electricity. Electrical Lab'y. Drawing. English Comp.	Mathematics. Electricity. Electrical Lab'y. Technical Appli- cations of Elec- tricity. English Comp. Thesis.
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CIVIL — B. C. E.

Mathematics. Mechan. Draw'g. Freehand Draw'g. Shop Work. Rhetoric. French (or German).	Mathematics. Descriptive Geometry. Mechan. Draw'g. Physics. Rhetoric. French (or German).	Mathematics. Physics. Surveying. Field Work. Drawing. Elective (English). German (or French).	Mathematics. Physics. Mathemat. Astr. Shop Work. Surveying. Field Work. Drawing. German (or French).	Mathematics. Mechanics. Chemistry. Field Work. Drawing. Electricity (or Geology).	Mathematics. Mechanics. Steam Engineer- ing. Drawing. Electricity (or Chemistry).	Mathematics. Civil Engineer'g. Road Engineer'g. Field Work. Drawing. Electricity (or Chemistry). English Comp. Thesis.	Mathematics. Civil Engineer'g. Road Engineer'g. Drawing. Electricity (or Chemistry). English Comp. Thesis.
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Buildings and Equipment.

BUILDINGS.

The College buildings are : Ballou Hall, containing recitation rooms, and the chemical and physical laboratories ; Barnum Museum, containing the natural history collections, and the biological and geological laboratories and lecture room ; Goddard Chapel ; Goddard Gymnasium ; the Library ; and three dormitories, — East Hall, West Hall, and Dean Hall. The Bromfield-Pearson School building is available for the technical courses of the College. A new building is in process of erection, and will be completed during the present college year, to contain rooms for students and a dining-hall ; and Metcalf Hall, for the accommodation of women-students, will be ready for use in the college year 1894-95. Two buildings, Miner Hall and Paige Hall, are devoted to the use of the Divinity School.

LIBRARY.

The Library contains twenty-nine thousand five hundred bound volumes, and about thirteen thousand pamphlets. It includes, in a separate room, the private library (numbering fourteen hundred and forty volumes) of the late Rev. William H. Ryder, D. D., of Chicago. On the tables are sixty periodicals ; and in the same building a reading-room, maintained by the students, supplies the daily and weekly papers. Provision for the purchase of books is chiefly from the income of the Joy Library Fund, now amounting to twenty thousand dollars. The average annual increase by donation and purchase, for the last five years, has been about twelve hundred volumes. The Library is open to all members of the College every day in the week, except Sunday, from 8.30 A. M. to 12.45 P. M., and from 2 to 5 P. M. It is also open Monday and Thursday from 7 to 9.30 P. M.

In addition to the general library, there is in Miner Hall the collection of the Universalist Historical Society (thirty-five hundred volumes and several thousand pamphlets), to which, on application, students have free access; and in the Barnum Museum the department library of Natural History, numbering six hundred bound volumes and about one thousand pamphlets.

MUSEUM.

The Barnum Museum of Natural History was built in 1883-84 by the late P. T. Barnum, who also gave the college a fund for its maintenance, and later, by bequest, gave funds for the erection of two wings to the central building. One of these wings will soon be erected. It will afford exhibition rooms for the mineralogical and geological collections, as well as additional laboratories for the biological department.

The College is also indebted to Mr. Barnum for the larger portion of its zoölogical collection. This serves to illustrate all groups of the animal kingdom and is especially rich in skeletons and mounted skins of mammals. Besides the more common forms, it also contains many rare and interesting species as *Hatteria*, *Polypterus*, *Ceratodus*, *Protopterus*, *Cestracion*, *Amphioxus*, *Peripatus*, and *Pentacrinus*, the whole being well adapted for the purposes of instruction.

The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe and the Southern and Western States. The geological collection contains representatives of the various types of rocks as well as of fossils from all formations. Especially interesting are the nearly perfect skeletons of *Ichthyosaurus* and *Plesiosaurus*. The mineralogical collection, which has been assembled with great care, contains most of the species, in very fine examples. Among those at present displayed are collections illustrating the chemical and physical properties of minerals.

The laboratories and lecture rooms of the departments of Biology and Geology are in the Museum building. The

geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments; the mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work; the biological laboratory is equipped with all facilities for elementary instruction as well as for research work in the lines of Anatomy, Histology, and Embryology.

A department library of Natural History has recently been established in the Barnum Museum. It already contains six hundred volumes and about a thousand pamphlets. Besides the elementary works upon Botany, Zoölogy, and Geology it contains numerous series of journals and proceedings of societies, most of the sets being complete since 1870.

GYMNASIUM.

The Goddard Gymnasium is the gift of Mrs. Mary T. Goddard, and comprises, besides the main room, for individual and class exercise, dressing-rooms, tub-baths, shower-baths, and lockers. The floor space unoccupied by apparatus is sufficient to accommodate a class of sixty men. The apparatus embraces that usually found in a well-equipped gymnasium, and includes fourteen Sargent developing machines. A running-track, one thirty-second of a mile in length, extends around the room. A full set of anthropometric instruments admits the accurate measurement of each student as preliminary to the assignment of suitable exercise.

PHYSICAL LABORATORY.

The Physical Laboratory contains apparatus sufficient for illustrating all the general principles of Physics. The equipment includes a dividing engine, chronograph, cathetometer, sextant, microscope, saccharimeter, polariscope, spectroscope, spectrometer, optical bench, Rowland's gratings, and charts of the solar spectrum; also apparatus for projection with sunlight, line and electric lights. In the field of electricity the equipment is especially good, including standards of resistance,

of capacity, and of electro-motive force, besides a variety of instruments for accurate measurement.

ELECTRICAL LABORATORY.

The Electrical Laboratory is supplied with the apparatus needed for testing and experimental purposes; among which may be mentioned ammeters, voltmeters, Wheatstone bridges, reflecting galvanometers, an electronometer, Sir William Thomson's standard balances, condensers, a large induction coil, and, in process of construction, an electro-dynamometer with coils a metre in diameter.

The dynamo-room contains a B. F. Sturtevant high-speed automatic engine of about twenty-five horse-power, belted to a line of shafting, the driven pulley being connected to the shafting through an Emerson power-scale reading to forty horse-power. From this shafting are belted an American and a Ball arc-light dynamo, a small alternator, a special 4,000-watt machine for experimental purposes, and a pair of 110-volt 1,500-watt machines for the Library three-wire installation, and for charging the storage battery. Three other machines are in process of construction, — one of 12 kilo-watts and 110 volts. Steam power is furnished by two Whittier tubular boilers.

Belonging to the dynamo-room are over twenty arc-lamps and a supply of electrical testing instruments. Adjacent is the battery-room, the main battery consisting of sixty of the large cells of the American Accumulator Company. These cells are in constant use for experimental and motor work, and for lighting. Connected with the laboratories is a workshop containing several lathes, with an outfit of wood and metal working tools used in the construction and repair of apparatus. Most of the rough and some of the fine apparatus used in the dynamo-room and laboratories is manufactured in this room.

CHEMICAL LABORATORY.

The Chemical Laboratory has desks for forty-three students, and is supplied with reagent bottles, sinks, and hoods. The

lighting is by electricity. The store-room contains a full stock of ordinary chemical apparatus, a full set being furnished to each student working in the laboratory. Students in the advanced courses work in the private laboratory of the professor in charge, and have access to the weighing-room, where there are accurate chemical balances for quantitative work. Standard books of reference are also at hand.

BROMFIELD-PEARSON BUILDING.

The Bromfield-Pearson Building is provided with shops and drafting-rooms equipped for the instruction of classes in the Engineering courses in Carpentry, Pattern-making, Forging, Foundry and Machine Work, and Drawing. The complete equipment will be in readiness for the coming year and will include a forge shop and foundry, provided with the necessary forges and tools for a class of eighteen; pattern and machine shops, also equipped for classes of eighteen, each member being provided with a lathe, bench, and necessary tools. The drafting-rooms are in the third story and separated from the noise and vibration of the shops. Abundant and uniform light is provided by means of large skylights on the northerly side.

General Information.

RELIGIOUS OBSERVANCES.

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sundays devolves upon the President of the College; but variety and interest are given to the preaching services by frequent exchanges with neighboring clergymen. Attendance upon Sunday services is required; but permission is freely given to those who desire to attend elsewhere. A Sunday-school is maintained in connection with Sunday worship, and students are made welcome to classes studying the Bible and subjects bearing upon the conduct of life.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell, of Arlington, is delivered before the Trustees, Faculty, and students on the first Sunday of the college year, by either a clergyman or a layman, on a subject prescribed by the testator.

ADMISSION AND REGISTRATION.

The first examinations for admission to the College of Letters are held on the three days immediately following the annual Commencement in June, and the second examinations on three successive days in September, the last being the opening day of the college year. The program of the examinations may be found in the College Calendar on pages 5 and 6. Entering students are required to register at the Secretary's office before taking their examinations. Those entering on certificates must file the proper blanks (to be obtained of the Secretary of the

Faculty) at least one month before the opening of the college year. This is necessary for a thorough examination by the Faculty of the statements submitted, and any one who does not comply with the full requirements relating to certificates may be required to take the examinations as a condition of admission to the College.

Every student who has been a resident one year or more at the College is required to register at the Secretary's office before noon of the opening day of the college year, and must then file, on blanks furnished for the purpose, two statements of his plan of study for the coming half-year, one to be kept on file by the Secretary, the other for the use of his major instructor. The following day will be devoted to whatever consultations with students instructors may appoint. No petitions concerning the courses of students in regular standing, except such as may be made in appeal from the decisions of major instructors, will be brought up for action by the Faculty; but all petitions relating to special courses and all appeals from decisions of major instructors must be before the Faculty on the evening of this day.

Instructors will post their class lists before 8.45 A. M., on the morning of the third day, and all students will be expected to meet their program appointments on and after that day. No student will be recognized as a member of a class whose name does not appear in the instructor's list of that class.

The same regulations are in force at mid-year and apply to all students, the arrangements for the first three days of the second half-year being the same as those for the first three days of the first half-year.

Students entering Tufts College after pursuing study in any other college of equal grade are credited with the number of hours' work actually done towards the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on the course of this College.

SPECIAL STUDENTS.

Students wishing to pursue a special course of study, who are not candidates for a degree, are subject to the following regulations: —

1. All applicants for special courses shall satisfy the instructors in those courses that they are prepared to pursue the same.

2. Every special student having less than fifteen program hours a week will be required to obtain seventy per cent in each course pursued by him. This rule shall apply to the work of the term as well as to examinations.

3. Special students under rule 2 who fail in any course will be required to take that course again the next year.

4. Special students whose program hours number fifteen or more will be treated, as regards conditions, in the same way as regular students.

5. A special student, on leaving College, shall be entitled to a certificate giving the per cent attained in each course pursued, and signed by the President and Secretary.

6. Special students in Electrical Engineering are required to pass examinations in General Physics, Trigonometry, and Elementary Calculus.

TERMS AND VACATIONS.

The college year begins on the third Thursday in September, and ends at Commencement, the third Wednesday in June. The year is divided into two terms of eighteen weeks each. There are no college exercises during a recess of two weeks at Christmas, three days at Thanksgiving, and three at Fast Day.

EXPENSES.

The charge for instruction is *one hundred dollars* a year.

Students in the laboratories are charged for certain materials used and for breakage. The charge to engineering students for shop work is *twenty dollars* a year, and other students who take shop work are charged extra.

A charge of *ten dollars* a year for the care of rooms is made to all persons rooming in any of the College buildings, except Paige Hall. Any damage done by students to College property is charged in the term bills.

Beginning with the college year 1894-95, every student who enters the College of Letters will be required to deposit with the Treasurer of the College either a bond with two satisfactory sureties for the sum of *one hundred and fifty dollars*, or the sum of *seventy-five dollars* in cash, which sum, with interest at the rate of four per cent yearly, will be returned when the student leaves the College, his term bills first being paid in full.

The charges for each year are contained in two bills, of which the first is made at the middle of the year, and is payable on the first day of March; the second is made immediately after Commencement, and is payable on the first day of the following college year; but the second bill of the Senior year must be settled by the Saturday before Commencement.

Students board in commons at \$3.50 per week; in private families at \$3.50 to \$5.00 for table board. Other expenses vary with the economy of each student. Students furnish their own rooms.

The following estimates represent the fixed annual expenses:—

Tuition	\$100.00	\$100.00
Gymnasium	4.00	4.00
Half room-rent	15.00	75.00
Care of rooms	10.00	10.00
Board, \$3.50 to \$5.00 a week (36 weeks)	126.00	180.00
Total	\$255.00	\$369.00

SCHOLARSHIPS.

Awards of scholarships are made by the Board of Trustees on the recommendation of the Faculty. The obtaining of a scholarship for one year does not constitute any title to a second nomination.

Applications for scholarships and other aids must be made to the Faculty on or before the first day of November; and if the applicant be a minor, must be sanctioned by his parent or guardian. Scholarships will be granted, in general, only to students actually in need of such aid. No one need apply who has not made satisfactory progress, or who has come under any grave censure in the course of the year.

Scholarships and gratuities will not be available to any student until all college dues for the year, other than those for which the scholarship or gratuity is to apply, have been paid. No scholarship will exceed one hundred dollars, and no gratuities will be granted to any student entering the College after 1893.

The following scholarships, of one hundred dollars each, are awarded annually: —

THREE STATE SCHOLARSHIPS, — Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS, — Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS, — Established in honor of the late William J. Walker, M. D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS, — Founded by the late Moses Day, of Roxbury.

THE A. A. MINER SCHOLARSHIP, — Founded by A. A. Miner, D. D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP, — Founded by the late Charles Robinson, LL. D., of Newton.

THE PATTERSON SCHOLARSHIP, — Founded by A. J. Patterson, D. D., of Roxbury, in the name of A. J. and Jane L. Patterson.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP, — Founded by William Oscar Cornell, of Providence, R. I.

THE ARA CUSHMAN SCHOLARSHIP, — Founded by Ara Cushman, of Auburn, Me.

THE LAURA A. SCOTT SCHOLARSHIP, — Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP, — Founded by Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP, — Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP, — Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP, — Founded by Mrs. Emily R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP, — Founded by Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP, — Founded by Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP, — Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram, H. Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP, — Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP, — Founded by Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP, — Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP, — Founded by Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP, — Founded by John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP, — Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP, — Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP, — Founded by Henry Rollins, of Bangor, Me. [The income of this scholarship is not at present available.]

THE J. H. MORLEY MEMORIAL SCHOLARSHIP, — Founded by Herbert Morley Small, of Baldwinville.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP, — Founded by friends of the late E. H. Chapin, D. D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP, — Founded by Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU 2d MEMORIAL SCHOLARSHIP, — Founded by Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP, — Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP, — Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP, — Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE J. D. PEIRCE SCHOLARSHIP, — Founded by the children and other relatives of the late J. D. Peirce, D. D., of Attleboro.

THE SCHOLARSHIP OF THE CLASS OF 1857, — Founded by Heman Allen Dearborn and William Newhall Eayrs, for the benefit of women students.

OLNEY ARNOLD, of Pawtucket, R. I., and ISAAC P. T. EDMANDS, of Boston, each pay one hundred dollars annually for a term of years.

The following UNIVERSALIST PARISHES have provided for annual payments of one hundred dollars each: —

Newton, Boston (Columbus Avenue), Somerville (Cross Street), Roxbury.

The following scholarships of fifty dollars each are awarded annually : —

THE A. A. MINER SCHOLARSHIP, — Founded by A. A. Miner, D. D., of Boston.

THE PERKINS SCHOLARSHIP, — Founded by James D. Perkins, of Brooklyn, N. Y.

THE MOSES DAY SCHOLARSHIP, — Founded by the late Moses Day, of Roxbury.

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY, — Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with a fair degree of attainment, the greatest improvement in Oratory.

APPOINTMENTS. — The pay of a monitor is *twenty dollars* a year; that of the bell-ringer and the organist, *one hundred and fifty dollars* each.

PRIZES.

GODDARD PRIZES. — In the second term of the academical year three prizes of *fifteen dollars* each are assigned from the Goddard Prize Fund, as follows : —

A prize for the best examination in Plato's Symposium, or the Agamemnon of Æschylus, including an account of the author and his works.

A prize for the best Latin prose translation, by a member of the class pursuing Latin 2, of the seventeenth and eighteenth sections of Chapter xxxiv. in Liddell's History of Rome.

A prize for the best examination in the Mathematics of the first year.

The translations must be left at the President's office by the first day of May, in sealed envelopes, accompanied by sealed letters containing the authors' names.

RHETORICAL PRIZES. — Six prizes are awarded, as follows : —

Two prizes, of *twenty* and *ten dollars* respectively, to the best readers among students who have taken six term hours in Oratory.

Two prizes, of *twenty* and *ten dollars* respectively, to students who have taken four term hours in Oratory, for the best exhibition of improvement and skill in elocution.

Two prizes, of *twenty* and *ten dollars* respectively, on the same conditions, to students who have taken two term hours in Oratory.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order to enter the public competition, candidates, as well as their selections, must be approved by the Professor of Oratory.

ENTRANCE EXAMINATION PRIZES. — Two prizes, of *thirty* and *twenty dollars* respectively, are awarded for the best entrance examinations. No one will be considered a candidate for such prize unless he has passed at the regular examinations in all the subjects required for admission to the College, and has been admitted without conditions. These prizes are payable at the end of the first term in College.

The foregoing prizes are not awarded unless, in the opinion of the respective judges, there is sufficient merit in the several contests to warrant their distribution.

HONORS AND DEGREES.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Courses in Liberal Arts who shall have attained Grade A (at least eighty-seven per cent) in his major subject, and Grade B (at least seventy-five per cent) in the collateral subjects.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Engineering Courses who shall have complied with the following conditions: —

In two years preceding graduation, —

1. He must have attained Grade A (over eighty-seven per cent) in the equivalent of six hours a week for a year in the subject in which he desires honors.

2. He must also have attained Grade A in extra work in this or a cognate subject equivalent to three hours a week for a year.

3. He must have attained Grade B (over seventy-five per cent) in the average of all his studies during this period.

The following subject in the Engineering Courses is open for Honors: — Electricity.

HONORABLE MENTION will be made in the Commencement program and in the Annual Catalogue of a student who has attained Grade A or B in a subject to which, during the two years preceding, he has given the equivalent of not less than six hours a week for a year.

THE DEGREE OF BACHELOR OF ARTS will be conferred at Commencement by the Trustees, on recommendation of the Faculty, upon students who shall have complied in a satisfactory manner with the conditions stated on pages 25 and 32.

THE DEGREE OF BACHELOR OF PHILOSOPHY will be conferred upon students who shall have complied with the conditions stated on pages 25 and 32 for the attainment of that degree.

THE DEGREE OF BACHELOR OF CIVIL ENGINEERING, or of BACHELOR OF ELECTRICAL ENGINEERING, will be conferred upon students who shall have completed the required course, under the same conditions.

Students of the courses in Liberal Arts may so arrange their elective work as to make it possible to obtain the degree of Bachelor of Civil Engineering or of Electrical Engineering after a graduate course of one year in the Engineering department.

For the advanced degrees of MASTER OF ARTS, DOCTOR OF PHILOSOPHY, CIVIL ENGINEER, and ELECTRICAL ENGINEER, see Graduate Department, page 92.

Graduate Department.

EXECUTIVE BOARD OF THE FACULTY OF THE GRADUATE DEPARTMENT.

ELMER H. CAPEN, D. D., *President.*
 HEMAN A. DEARBORN, A. M.
 WILLIAM G. TOUSEY, A. M., B. D.
 AMOS E. DOLBEAR, M. E., PH. D.
 GEORGE T. KNIGHT, A. M., D. D., *Secretary.*
 J. STERLING KINGSLEY, S. D.
 FRANK P. GRAVES, A. M., PH. D.

STUDENTS.

Fellows.

KENYON, FREDERICK COURTLAND, *Lincoln, Neb.* *Dean Hall, 1.*
 S. B. (Nebraska University), 1892.
 Instructor in Geology, Nebraska University, 1891-92. *Biology. Olmstead Fellow in Natural History.*

SIMMONS, ORVILLE LOGAN . *Goshen, Ind.* *Mr. Fillebrown's.*
 S. B. (Purdue University), 1893.
Biology. Miner Fellow in Natural History.

Candidates for the Degree of Master of Arts.

BROWN, HENRIETTA NOBLE . *College Hill, Professors Row.*
 A. B., 1893. *Biology and Chemistry.*

HATHAWAY, CHARLES AUGUSTUS *Stamford, Conn.*
 A. B., 1890. *Geology.*

MCCOLLESTER, LEE SULLIVAN *Detroit, Mich.*
 A. B., 1881; B. D., 1884. *Church History.*

- NICHOLS, MINNIE ADELAIDE *Stoneham.*
 A. B. (Boston University), 1893. *Classical Philology.*
- PROUTY, WILLIS JAMES *Meriden, Conn.*
 A. B., 1887. *Latin.*
- TOWLE, GEORGE GILMAN *Dover, N. H.*
 A. B., 1891. *Greek and Latin.*
- TUCKER, CHARLES ROLLIN . . . *Stoughton. East Hall, 8.*
 Ph. B., 1891. *Chemistry and Physics.*
- WADE, CHARLES ST. CLAIR, *West Somerville. East Hall, 24.*
Classical Philology.

INSTRUCTION.

Instruction in the Graduate Department is given by the Faculty of the College of Letters and of the Divinity School. Such regular subjects as are at present offered for graduates only may be found indicated in the statements of the programs of the several departments of instruction, on page 35 and following pages. The advanced elective work offered to undergraduates in any department of the College of Letters is open to graduate students, and will count for the degree of A. M. on condition that it be not counted for any other degree. Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

The degrees offered by this department are Master of Arts, Civil Engineer, Electrical Engineer, and Doctor of Philosophy.

DEGREES.

THE DEGREE OF MASTER OF ARTS will be conferred upon graduates of Tufts College who have received the degree of A. B., or upon graduates of other colleges whose course of study has been equivalent to that required at Tufts College for the degree of A. B., who shall complete an approved course of advanced study in one, or at the most two, departments, during a residence of not less than one year, and shall prepare a thesis and pass a satisfactory examination upon the work performed.

Graduates of Tufts College who have taken the degree of Ph. B., or graduates of other colleges holding a degree of simi-

lar grade, must complete the requirements for the degree of A. B. before they can be entered as students in courses leading to the degree of A. M.

Candidates for this degree must make a written application to the Executive Board of the Faculty of the Graduate Department before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year's study they must also give a second notice three months before receiving the degree. The condition of residence may be waived by special permission, but in this case the degree may not be taken with less than two years' graduate study.

THE DEGREE OF CIVIL ENGINEER OR ELECTRICAL ENGINEER will be conferred upon Bachelors of Civil or Electrical Engineering who shall satisfactorily pursue advanced professional study at the College for one year and present a thesis, or who shall present suitable evidence of three years of professional work, of which one must be in a position of responsibility. A certain amount of professional study will be assumed, upon which a thesis shall be presented. The regulations concerning application for this degree are the same as for the degree of A. M.

THE DEGREE OF DOCTOR OF PHILOSOPHY will be conferred upon Bachelors of Arts, Philosophy, or Science, who shall have pursued at least three years of graduate study, two years of which must be in residence. This degree will not be conferred simply on the ground of the completion of the required course of study. High attainments are necessary, and especially the power of original thought and independent investigation. The whole course of study must at present be devoted to one subject, and a thesis must be presented which shall give evidence of original research. Other special requirements may be made by the instructors in charge of the work of the candidates.

The candidate for this degree must make a written application to the Secretary of the Executive Board of the Graduate Department at least two years before the degree is to be conferred, and his thesis must be handed to the Secretary of the above board at least two months before Commencement.

THE DEGREE OF A. M. may be taken by candidates for the degree of Ph. D. at the end of their first year's study, or will be conferred together with the latter degree.

DEPARTMENTS OPEN TO CANDIDATES FOR PH. D.

The departments at present open to candidates for this degree are Classical Philology, Biology, and Chemistry.

In CLASSICAL PHILOLOGY the candidate for the degree of Ph. D. must be able to read Greek and Latin fluently at sight and to use German authorities when necessary; he must have completed in residence Latin 6 and 7 and two courses out of Greek 8, 9, and 10, as well as equivalents for all work preceding these subjects; and he must present a satisfactory thesis on some subject of original research in Classical Philology.

In BIOLOGY, candidates for the degree of Ph. D. must have a good working knowledge of French and German before beginning their work; they must carry on research in Animal Morphology for at least two years in the College Laboratory, and at least one summer at some seashore station; they must present acceptable thesis, based upon the work done, and must pass an examination upon General Zoölogy.

In CHEMISTRY, candidates for the degree of Ph. D. must be able to translate scientific German readily and accurately before beginning their work; they must also have completed a preliminary course in Organic Chemistry (Chemistry 5) with distinction; they must carry on research for at least two years in the College Laboratory in Inorganic or Organic Chemistry; they must present satisfactory theses on this work; and also pass examinations upon Theoretical Chemistry.

FELLOWSHIPS.

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY. — In accordance with the spirit of the gift of the late Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowships. The

income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History subjects upon recommendation of the graduate Faculty. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, of an ability to profit by the work to be done, and testimonials of good character from instructors or others. Any article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject under the direction of the professors in charge of the departments of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made, half in January and half in June; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single reelection, but incumbency constitutes no claim to reappointment.

TUITION.

The tuition fee for the whole course for the degrees of Master of Arts, Civil Engineer, and Electrical Engineer is *one hundred dollars*, of which *fifty dollars* is payable in advance.

The tuition fee for candidates for the degree of Doctor of Philosophy is *one hundred dollars* for each year spent at the College, of which *fifty dollars* is payable in advance each year.

The requirement of bonds stated on page 84 applies to all students of the College, graduate as well as undergraduate.

DIVINITY SCHOOL.

Calendar.

1893.

- OCT. 4. Examination for Admission, in Miner Theological Hall,
beginning at 9 A. M.
- OCT. 5. School Year begins, Thursday morning.
- OCT. 8. Russell Lecture.
- DEC. 20. Christmas Recess begins, Wednesday evening.

1894.

- JAN. 3. Christmas Recess ends, Wednesday evening.
- JUNE 5. Prize Reading. Greenwood Prizes.
- JUNE 15. Class Day.
- JUNE 17. Baccalaureate Sermon.
- JUNE 20. Commencement.

SUMMER VACATION, THIRTEEN WEEKS.

- SEPT. 19. Examination for Admission, in Miner Theological Hall,
beginning at 9 A. M.
- SEPT. 20. School Year begins, Thursday morning.
- SEPT. 23. Russell Lecture.
- DEC. 19. Christmas Recess begins, Wednesday evening.

Faculty of the Divinity School.

ELMER H. CAPEN, D. D., *President.*

In charge of Political Economy.

CHARLES H. LEONARD, D. D., *Dean.*

Goddard Professor of Homiletics and Pastoral Theology.

THOMAS J. SAWYER, D. D.

Packard Professor of Christian Theology, Emeritus.

WILLIAM G. TOUSEY, A. M., B. D.

Professor of Ethics and Philosophy of Theism.

GEORGE T. KNIGHT, A. M., D. D., *Secretary.*

Professor of Church History, also in charge of Systematic Theology.

GEORGE M. HARMON, A. M., B. D.

Professor of Biblical Theology.

DAVID L. MAULSBY, A. M.

Professor of Oratory.

WARREN S. WOODBRIDGE, A. M., B. D.

Woodbridge Professor of Applied Christianity.

ANSON B. CURTIS, PH. D.

Instructor in Hebrew.

NON-RESIDENT LECTURERS.

HENRY I. CUSHMAN, D. D.

Lecturer on Methods of Biblical Study.

DAVID G. LYON, PH. D.

Lecturer on Assyriology.

CHARLES W. BIDDLE, D. D.

Lecturer on the Pastoral Office.

Students.

Senior Class.

Ball, Clarence Leon . . .	<i>Cambridge . . .</i>	Paige Hall, 19.
Brown, Allen	<i>Cadillac, Mich. .</i>	Paige Hall, 12.
Butler, Thomas	<i>Philadelphia, Pa. .</i>	Paige Hall, 29.
Dickins, Curtis Hoyt . . .	<i>Philadelphia, Pa. .</i>	Paige Hall, 31.
Foster, Augustine Norwood,	<i>Meriden, Conn. .</i>	Paige Hall, 18.
Grose, Arthur Wilder, A. B.,	<i>Abington . . .</i>	Paige Hall, 6.
Hoyt, Hervey Hastings . .	<i>Peabody, Kan. .</i>	Methuen.
Leighton, George Edward .	<i>Dexter, Me. . .</i>	Paige Hall, 8.
Morrison, Ira Daniel . . .	<i>Brookings, So. Dak.</i>	Paige Hall, 30.
Perkins, Frederic Williams,		
A. B.	<i>Roxbury . . .</i>	Paige Hall, 7.
Petrie, Omer Genere . . .	<i>El Dorado, O. .</i>	Paige Hall, 17.

Middle Class.

Blair, Arthur Adolphus . .	<i>Manchester, N. H.,</i>	Paige Hall, 13.
Cardall, Alfred James . .	<i>Bay City, Mich. .</i>	Paige Hall, 24.
Cobb, Joseph Fernald, A. B.,	<i>Deering, Me. . .</i>	Paige Hall, 11.
Roscoe, Tom, M. D. . . .	<i>Somerville . . .</i>	178 Central St.
(Vt. Med. Coll.)		
Smith, Ashley Auburn . .	<i>Auburn, Me. . .</i>	Paige Hall, 1.
Tillinghast, James Dannals,	<i>Buffalo, N. Y. . .</i>	31 George St.
Wells, Charles Henry . . .	<i>Barre, Vt. . . .</i>	Paige Hall, 32.

Junior Class.

Blackford, Frank, B. S. . .	<i>El Dorado, O. . .</i>	Paige Hall, 27.
(Nat. Norm. Univ.)		
Dickerson, Jesse Clifford .	<i>Detroit, Mich. . .</i>	Paige Hall, 34.
Eddy, Frank Fay	<i>Charlotte, Mich. .</i>	Paige Hall, 25.
Ferguson, Frank Alvah,		
A. B. (Bost. Univ.) . .	<i>Somerville . . .</i>	316 Beacon St.
Fischer, Theodore Adolph .	<i>Meriden, Conn. .</i>	Paige Hall, 20.

Taylor, Henry Butterfield .	<i>Buffalo, N. Y.</i> . .	Paige Hall, 36.
Ward, Charles Merrill . .	<i>Brattleboro, Vt.</i> . .	Paige Hall, 3.
Wilson, John Harner . . .	<i>Philadelphia, Pa.</i> . .	Paige Hall, 5.

Sub-Junior Class.

Bartlett, Alden Eugene . .	<i>Newtonville</i> . . .	Paige Hall, 15.
Bissell, Flint Mandrin . .	<i>Wellesley</i> . . .	Paige Hall, 23.
Earle, Augusta Gertrude .	<i>Somerville</i> . . .	8 Franklin St.
Eills, John	<i>Lowell</i>	Paige Hall, 4.
Fortier, George Ferdinand .	<i>Somerville</i> . . .	Paige Hall, 2.
Jones, Clifford Ernest . .	<i>Cleveland, O.</i> . .	Paige Hall, 10.
Leavitt, Fenwick Lasselle .	<i>Auburn, Me.</i> . . .	Paige Hall, 22.
Macduff, Isabella Stirling .	<i>Claremont, N. H.,</i>	114 Curtis St.
Powers, Mariette	<i>Newry, Me.</i> . . .	114 Curtis St.
Robbins, Clarence Guy . .	<i>Melrose</i>	Paige Hall, 9.
Thompson, George Linnaeus,	<i>Stafford, Conn.</i> . .	Paige Hall, 28.

Special Students.

Blackford, Alfred Newton .	<i>El Dorado, O.</i> . . .	Paige Hall, 16.
Kenyon, John Humphrey		
Plummer	<i>Hope, Me.</i>	156 Boston Ave.
MacCoy, Mabel Lilla . . .	<i>New York, N. Y.</i> . .	31 George St.

SUMMARY.

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Admission to the Theological Course.

Candidates unknown to the Faculty must bring satisfactory testimonials of good character. They must believe in the Christian religion, and have a sincere purpose to devote their lives to the Christian ministry. It is expected that they will present themselves on the day preceding the first day of the academic year.

Bachelors of Arts are admitted to the Junior Class without examination. Candidates for the Four-Years Course are examined in some of the Greek classics or in the Greek of the Gospels, and in the English studies usually pursued in high schools.

Applicants may be admitted to the School for any period of not less than one year. Those applying for admission to advanced standing are examined in the studies which have been pursued by the class they propose to enter.

It is earnestly recommended that all who are contemplating a course of theology should take, as preliminary, a full collegiate course of study. The call is for men of liberal culture, and academic discipline is of great value as a preparation for professional studies. It has not been thought expedient, however, to make such a requirement, for it has been found that earnest and capable men aspire to the Christian ministry whose circumstances forbid so extensive preparation. To meet the wants of such, and yet provide for thorough and comprehensive development, a four-years course has been instituted.

Course of Study.

SUB-JUNIOR CLASS.

Psychology.—The Intellect; The Sensibilities; The Will; Leading Questions of Mental Philosophy. *Three hours a week for the first term.* PROFESSOR TOUSEY.

Logic.—The First Principles of Logic; Concepts and Propositions; Immediate Inference; Deduction; Induction; Analogy; Hypothesis. *Four hours a week for the second term.* PROFESSOR TOUSEY.

Rhetoric.—Principles of Effective Speech; Rhetorical Analysis; Themes. *Three hours a week for one third of the year.* PROFESSOR LEONARD.

Old Testament.—Hebrew History. *Four hours a week.*—Hebrew Language (optional). *Two hours a week.* DR. CURTIS.

Oratory.—Practical Exercises in the reading of Scripture and Hymns. *Two hours a week for the second term.* PROFESSOR MAULSBY.

JUNIOR CLASS.

Logic.—Fallacies; Analysis of Arguments; Ethics of Belief. *Two hours a week for the first term.* PROFESSOR TOUSEY.

Old Testament.—Old Testament Theology. *Two hours a week.*—*Advanced Hebrew Language Studies (optional). *Two hours a week.* DR. CURTIS.

New Testament.—Hermeneutics; Criticism; Exegesis of Matthew's Gospel, with parallel and supplemental passages from the other Synoptics; The Life of Christ; Theology of the Synoptic Gospels. *Four hours a week.* PROFESSOR HARMON.

Church History.—History of the Church, of the Sects, and of Doctrines, from the Apostles to the Present Time; History of Doubt. *Four hours a week.* PROFESSOR KNIGHT.

Homiletics.—History of Preaching; The Idea and Structure of the Sermon; Homiletic Analysis. *Two hours a week for two thirds of the year.* PROFESSOR LEONARD.

Oratory.—Practice in the reading of Scripture, Hymns, and Sermon-literature. *Two hours a week for the first term.* PROFESSOR MAULSBY.

* Omitted this year.

MIDDLE CLASS.

Old Testament. — * Old Testament Sociology. *Two hours a week.*

DR. CURTIS.

New Testament. — Criticism and Exegesis of the Fourth Gospel; Johannine Theology. *Four hours a week.* PROFESSOR HARMON.

Ethics. — The Moral Nature; Ethical Theory; Practical Ethics. *Three hours a week for the year.* PROFESSOR TOUSEY.

Systematic Theology. — Theology; Anthropology; Soteriology; Eschatology; Critical Study of Modern Doctrines. *Four hours a week for the first term, and three for the second term.*

PROFESSOR KNIGHT.

Homiletics. — Study of Sermons of Eminent Preachers; Lectures; Sermon Writing and Preaching. *Three hours a week.*

PROFESSOR LEONARD.

SENIOR CLASS.

New Testament. — Criticism and Exegesis of Selected Passages from Romans, 1 Corinthians, and Hebrews; Pauline Theology. *Two hours a week for two thirds of the year.*

PROFESSOR HARMON.

Comparative Theology. — The Religions of Ancient Egypt and Chaldaea; Hinduism; Buddhism; Confucianism; Taouism; Parseeism; Mohammedanism. *Three hours a week for the first third of the year.*

PROFESSOR KNIGHT.

Philosophy of Theism. — Theistic Arguments; Special Studies with reference to the Evidences of Final Causes in Nature; Science and Religion. *Three hours a week.* PROFESSOR TOUSEY.

Political Economy. — Lectures on the History of Finance; Methods and Functions of Banking; Taxation, including Principles of Civil Government. Text-book work, Lectures, and Independent Investigations dealing with the History of Economics, Theories of Production, Consumption, Distribution, etc.; Problems of Profits, Wages, and Labor. *Three hours a week.*

PRESIDENT CAPEN.

Homiletics. — Homiletic Analysis; Lectures on Preaching; Composition and Delivery of Sermons. *Three hours a week.*

PROFESSOR LEONARD.

Pastoral Care. — Personal Qualifications and Duties of the Pastor; the Administration of Religion in General; Organized Work in the Parish. *Three hours a week for the second term.*

PROFESSOR LEONARD.

* Omitted this year.

Departments of Instruction.

Psychology.—The direct study of mental phenomena is encouraged, and the student is trained in the methods of psychological research. At suitable points attention is called to the great philosophical questions that have their origin in the study of mind. The aim throughout is eminently practical; and, while seeking a consistent theory of mental phenomena, there is constant reference to the professional uses of the science, — to the bearing of psychological law upon self-culture, and upon the arts of instructing and persuading men. Special effort is also made to supply the psychological data of the subsequent studies of the course.

Logic.—The Sub-Juniors receive instruction in the usual topics of an academic course. Considerable time is given to logical analysis and the employment of the inductive method as respects both discovery and proof.

The Juniors are exercised more especially in the application of logical principles. A review of the fallacious tendencies of the mind is followed by an extended study of Fallacies, as exemplified in the practical reasoning of men. The course concludes with a brief study in the Ethics of Belief. Under this head the nature and conditions of belief are discussed, the general principles of evidence reviewed, and certain current misconceptions exposed; the aim being to enforce the duty of rationalizing our beliefs, and, while pointing out the limitations of the reason, to develop confidence in its actual findings, and a proper fortitude of conviction.

Rhetoric.—The subjects of study are those usually discussed in the best treatises on Practical Rhetoric, especially in the chapters which deal with the art of constructing discourse, and

with the methods of applying the principles of rhetoric in actual literary work.

Old Testament. — I. Hebrew: The aim is a working knowledge of the language of the Old Testament. The first part of the year is devoted to the grammar and the vocabulary of the more common words, with the reading of easy prose. The method is inductive. The second part of the year is occupied with exegetical and critical readings from the Pentateuch, with especial reference to modern theories.

The text-books are Davidson's or Bissell's Hebrew Grammar, the Hebrew Bible, and Driver's Introduction, with references to Kuenen's Hexateuch, Addis's Hexateuch, and Bacon's Genesis of Genesis.

II. Advanced Hebrew: This is a continuation of course I. Selections from ancient, middle, and late Hebrew are read, and the various critical questions are examined from the point of view of the changed vocabulary and syntax, and from the growth of ethical and religious insight.

The courses in the Hebrew language are elective, and aim to supplement the work of the other courses, being at once more technical and more thorough, and leading naturally to independent study and research.

III. Hebrew History: The revised version of the Old Testament is the text-book, and the aim is to impart a knowledge of Israelitish history from its beginning to its close. Each reading is followed by a lecture on the part read in explanation and elucidation of the text. So far as possible books and parts of books are read in chronological order, and especial attention is paid to the recent Assyrian and Babylonian discoveries.

The reference books are Stanley's, Renan's, Toy's, and Wellhausen's Histories, and the Bible for Learners.

IV. Old Testament Theology: The aim is to systematize and emphasize the salient and permanent elements in Old Testament Religion. The text-books are Piepenbring's The-

ology of the Old Testament and Genung's Epic of the Inner Life (Job).

References are given to Schultz's Old Testament Theology, Toy's Judaism and Christianity, and Kuenen's Religion of Israel, and to Davidson's and Dillman's commentaries on Job.

The work is further supplemented with lectures during a portion of the hour on the canon and text, and on disputed points as to the date and meaning of some of the more difficult books.

V. Old Testament Sociology: The aim is to give by means of lectures a history of the social development of man as illustrated in Hebrew History. The method is historical and exegetical, while yet it seeks to do justice to the expressed ideals of the most spiritual. The main divisions are, Social Beginnings, The Family, The State, Economics, and The Influence upon these of the Biblical Religion and Morality.

Readings are assigned in the various histories and theologies of the Old Testament, and in the commentaries. Special study is also made of the various civil codes, and of one or more of the other books that are germane to the subject.

New Testament.—The origin, contents, and history of the New Testament writings are first considered, together with the history of the canon during the first two centuries, and the historical and archaeological problems involved; the aim being to make the student intelligent as to the leading questions in New Testament criticism, and to form in him the habit of critical judgment. The method pursued is to deal with these questions as they naturally arise in the exegesis. Topics are assigned, and references given to the leading authorities, by means of which the student is enabled to compare and contrast differing opinions, and arrive at his own conclusions. This work is supplemented with notes from the professor, and written examinations are held at convenient intervals.

The exegetical study of the class includes the life of Christ from the Synoptic Gospels, the teaching of the Fourth Gospel, and selected passages from Romans and First Corinthians.

The principles of interpretation are given to the class in notes, and the students are required to apply them to the passages read, to discover the main points to be interpreted, without recourse to commentaries, and to deal with these principal points in accordance with approved exegetical methods. Later in the course the class is taught the right use of commentaries.

The course also includes a study of New Testament Theology which covers the doctrines of Christ contained in the Synoptic Gospels, the Johannine theology, and the doctrinal system of Paul. The aim is to discover the main lines of thought stated and directly involved, and their relations to each other. The results of the study appear in the interpretation of the New Testament writings as they are read by the class.

Reference is made to the following authorities: Schürer, Westcott, Weiss, Reuss, Edersheim, Ewald, Davidson, Abbott, Lardner, Fisher, Keim, De Wette, Meyer, Lange, Olshausen, Alford, Godet, Ellicott, Luthardt, Delitzsch, and Schmid.

Church History.—The purpose is to secure a knowledge of the leading facts and forces in the history of the Christian Church in its various branches. By such a knowledge, discovering the causes now at work in religion, the student obtains a grasp of present facts and problems such as he can obtain from no other source. Incidentally he becomes familiar with theological terms, and is furnished with the tools of theological work. Also he is constantly instructed and inspired by the story of the great and good who have made the Church what it is. And in general, since in some degree the individual grows as the mass has grown, he finds in this study an education, an orderly development of his faculties.

The topics generally studied in regard to each period are: The External Growth of the Church, and its Relations to the State; the Internal Organization; Intellectual Life and Doctrine; Moral Life; the Form and Substance of Worship. In the latter part of the year special study is made of the chief

religious sects in the United States; and, lastly, of the History of Doubt.

The books used by the student are mostly contained in the Library of the College and in that of the Universalist Historical Society. They include Migne's edition of the Fathers; translations of the ante-Nicene Fathers, and others; the chief secondary authorities on general Church History, such as the works of Schaff, Fisher, Neander, Alzog, and the special historical works of Fisher, Müller, Dorner, Briggs, Eddy, Ballou.

In preparation for the regular class-room exercise, the student is provided with an analysis of each topic in order, and with references to original and secondary authorities. The student brings the result of his investigation to the class-room for criticism by his associates and instructor. At the completion of each topic the results are organized, and a written review held, the papers of which are returned, with comments as to truthfulness and mode of handling.

The students are also instructed in the methods of original investigation from primary authorities; and, especially in the history of doctrines, they prepare several pieces of original work during the year.

Comparative Theology.—The primary aim of this study is a general knowledge and a catholic temper regarding the non-Christian religions. A secondary utility is found in that a candid study of the excellencies and defects of many religions renders the student more able to reject the false, and more inclined to rest in the true, and to give it his confidence and strength.

The sources of information to which the student is referred are the Records of the Past, Müller's edition of the Sacred Books of the East, Müller's own writings, the series entitled Non-Christian Religious Systems; and, in addition, the works of Rawlinson, Wilkinson, Sayce, Johnson, Barth, Legge, Oldenberg, Edkins, Haug, and others. Considerable use is also made of articles in the *Encyclopædia Britannica*.

The religions studied are those of ancient Egypt and

Chaldaea; Hinduism, ancient and modern; the religions of Gautama Buddha, Confucius, Laou-tsze, Zoroaster, and Mô-hammed.

The topics noted are: The Deity; the Forms and Meaning of Worship; the Condition of the People, industrial, intellectual, and moral; and the Power of each Religion for the Elevation of the Human Race.

For the study of each topic in turn, the class is furnished with a syllabus and references. The results of their investigations are criticised and co-ordinated by students and instructor in the class-room.

The main purposes of this study are further secured by frequent inductive reviews, oral and written.

Ethics.—Analytical and inductive study of the moral experience is followed by an attempt to develop a correct moral theory. Attention is given to the leading questions in ethical philosophy. Such doctrines as Sentimentalism, Hedonism, Utilitarianism, Intuitionism, and Determinism are studied, not merely in a critical spirit, but with a view to discover the special aspects of truth for which they stand.

During the second half of the year the class attends more especially to Practical Ethics, dealing with the leading contemporary problems, such as Education, Charities, State Aid, Temperance, Socialism, etc. Some attention is also given to Casuistry. The course concludes with a review of what is distinctively known as Christian Ethics. The instruction throughout is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

Philosophy of Theism.—The various modes of the theistic argument are reviewed, their grounds scrutinized, and their logical value carefully discussed. The general method here, as in ethics, is to employ treatises available as texts, and to supplement them by means of annotations, lectures, and parallel

readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room, as securing a ready command of resources, and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism and the latest developments of science, and, by testing and chastening conclusions, to provide against fanaticism on the one hand, and frivolity of judgment on the other.

Systematic Theology. — The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose attempt is made to co-ordinate the products of Biblical Theology, Religious History, Natural Theology, Ethics, and, indeed, of all the sources of theological material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The subject has four great divisions, — the Doctrine of God, the Doctrine of Man, the Doctrine of Salvation, and the Doctrine of the Future Life. The traditional sub-divisions will be noted historically, but will be accepted only so far as they seem to rest on essential principles or the real relations of truth.

The method includes several stages: —

1. The outline history of thought on the topic in hand, or the analysis and classification of opinions and theories according to their logical relations.

2. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.

3. The organization of the results into a scientific product.

4. Illustrative applications to practical problems, — ecclesiastical, political, social, and personal.

This method requires frequent reference to books used in the departments whose products are here co-ordinated, and to

the theological works of A. H. Strong, Charles Hodge, James Martineau, Robert Flint, J. A. Dorner, H. Martensen, J. Müller, and other representative teachers of all times and faiths.

The student is furnished with references to the various sources of material, he is instructed in the method of inquiry, and his results are criticised in the class-room. The occasional written examinations require original work, in part, and one original essay from each student is required within the year.

Homiletics. — The course in homiletics covers two thirds of the Junior year and all of the Middle and Senior years, and includes the study of the most characteristic and instructive periods in the history of preaching; dictations and lectures on the idea and structure of the Sermon; analyses of portions of the Old and the New Testaments, with a view to the homiletical use of texts; the study of printed sermons, with special reference to form, expression, and the character and range of illustration; the composition and delivery of sermons, not less than six during the year, all of which are criticised by the class and by the professor; lectures during the Senior year on Helps in Sermon-Preparation, Modes of Development, Style in Spoken Discourse, the Invention and Arrangement of Material, Illustrations and Use of Anecdote, Personality in Preaching, Character and Preaching.

Pastoral Theology. — Historic basis is found for this particular study in the Apostolic Church, — its organization, polity, and methods of work, — and in the instituted life of modern churches, Prelatical, Presbyterian, Congregational; and results reached are considered with reference to the government and methods of the Universalist Church.

The course further provides for the discussion of the spiritual, mental, and social qualifications of the pastor; the study of the forms and conduct of public worship; the practical illustration of pastoral oversight and visitation, the methods of building and uniting a parish, and the theories of

church-work in Sunday-schools, missions, charities; the study of modern social and industrial problems; and lectures upon the official duties of the Christian minister.

From year to year the course in Pastoral Theology is supplemented with special lectures from clergymen who are engaged in the active work of the ministry.

Oratory.—The object of the instruction in the department of Oratory is to gain a natural as well as reverent manner of reading the Bible and the hymn-book, and also to cultivate in preaching a delivery that shall be forcible and sincere. To this end the class exercises consist of actual practice in reading selected hymns and portions of the Scriptures, with the preaching, in the advanced division, of parts of sermons. The work done is followed by criticism and suggestion from the instructor and the class. A special class offers opportunity for practice in extemporaneous speaking.

General Information.

RELIGIOUS EXERCISES.

Devotional services, conducted by the Professors and the Students, are held daily in the chapel. Members of the upper classes prepare sermons and preach them in turn before the class. An active branch of the Young People's Christian Union holds regular meetings for religious conference.

EXAMINATIONS.

Frequent written reviews are held in all departments; and when any subject is completed, the students are required to pass a written examination thereon.

LIBRARIES AND LECTURES.

Students have free access to the general library of the College and to the valuable library of the Universalist Historical Society. Important public libraries of Boston are open to students for consultation.

Supplementary lectures, which bear upon the general work of the Christian ministry and upon special subjects of study, are given at intervals throughout the year by well-known clergymen of the vicinity.

ELECTIVE STUDIES.

Students are permitted to elect studies in other departments of the College, subject, however, to the discretion of the Faculty.

GENERAL FACILITIES.

Important facilities for general improvement are offered to students, in the valuable libraries and museums of Boston and vicinity. Elaborate courses of lectures on scientific, social, and literary subjects are presented to the public from time to time. The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the stu-

dent in respect to their teachings and their methods. It is the policy of the school to encourage the judicious use of these important instrumentalities of culture.

GYMNASTICS.

At least two years' work in the Gymnasium is ordinarily required of all students. Provision is made for continuing such work according to individual needs.

COURSES OF STUDY AND DEGREES.

THE FULL COURSE for Bachelors of Arts occupies three years; for all others, four years. A special course of one, two, or three years may be taken.

THE DEGREE OF BACHELOR OF DIVINITY is conferred upon college graduates who pass satisfactorily an examination in the studies of the Three-Years Course, and upon others who complete the Four-Years Course with distinction.

THE DEGREE OF MASTER OF ARTS is conferred at the same time with the degree of Bachelor of Divinity upon Bachelors of Arts of Tufts College who have pursued with distinction the full course for B. D. This degree is conferred under the same conditions on Bachelors of Arts of other colleges, whose courses of study have been equivalent to the course for which the degree of A. B. is given by Tufts College.

Opportunities for pursuing advanced studies are offered to graduates and to others sufficiently qualified.

BUILDINGS FOR THE USE OF THE DIVINITY SCHOOL.

Miner Theological Hall contains eight large, well-lighted, and well-ventilated lecture-rooms, and a special room for the meetings of the Faculty.

Paige Hall, containing thirty-six rooms, affords a separate apartment for each student.

Until other buildings are provided, two of the rooms in Miner Theological Hall will be used for the Historical and the Reference Libraries, and for the religious services of the school. A third room in the same hall is furnished as a parlor, and known as the Maria Miner Reception Room.

EXPENSES.

The rooms in Paige Hall are neatly and amply furnished, heated by steam, and lighted by gas. The only necessary articles to be provided by the student are sheets, pillow-cases, blankets, and towels.

The necessary school expenses, including board, washing, light, steam-heat, care of room, and gymnasium charges do not exceed two hundred and twenty-five dollars a year.

Beginning with the school year 1894-95, each student who enters the school will be required to deposit with the Treasurer of the College either a bond with two satisfactory sureties for the amount of fifty dollars, or the sum of twenty-five dollars in cash, which sum shall bear interest at the rate of four per cent yearly, and shall be returned when the student leaves the Divinity School, his term bills first being paid in full.

The General Convention of Universalists aids students by a system of loans; and those in the regular course who have shown sufficient maturity are permitted to preach, under the direction of the Faculty, during the year and a half preceding their graduation. In this way they may add to their pecuniary resources.

SCHOLARSHIPS, ETC.

THE GREENWOOD SCHOLARSHIP. — The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given in prizes to members of the Divinity School for excellence in the department of Oratory.

REV. W. S. PERKINS, D. D., of Meriden, Conn., provides for an annual prize of twenty-five dollars to encourage extemporaneous preaching.

THE DOCKSTADER SCHOLARSHIPS. — The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The income of five hundred dollars, given by REV. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

MEDICAL SCHOOL.

Faculty of the Medical School.

ELMER H. CAPEN, D. D., PRESIDENT.

ALBERT NOTT, M. D., DEAN.

Professor of Physiology.

CHARLES P. THAYER, M. D., SECRETARY.

Professor of General Descriptive and Surgical Anatomy.

HENRY W. DUDLEY, M. D.

Professor of Pathology.

WILLIAM R. CHIPMAN, A. B., M. D.

*Professor of the Principles and Practice of Surgery and
Operative Surgery.*

WALTER L. HALL, M. D.

*Professor of the Principles and Practice of Medicine and
Clinical Medicine.*

JOHN W. JOHNSON, M. D., TREASURER.

Professor of Obstetrics and Gynæcology.

FRANK G. WHEATLEY, A. M., M. D.

Professor of Materia Medica and Therapeutics.

OTHER INSTRUCTORS.

ARTHUR E. AUSTIN, A. B., M. D.

Lecturer on Medical Chemistry.

CHARLES A. PITKIN, A. M., PH. D.

Lecturer on General Chemistry.

JOHN A. TENNEY, M. D.

Lecturer on Ophthalmology and Otology

SAMUEL G. WEBBER, A. B., M. D.

Lecturer on Neurology.

GEORGE F. EAMES, M. D., D. M. D.

Lecturer on Laryngology.

THOMAS M. DURELL, M. D.

Lecturer on Medical Jurisprudence.

J. CUSHING GALLISON, M. D.

Lecturer on Genito-Urinary Surgery.

J. STERLING KINGSLEY, S. D.

Lecturer on Histology.

WILLIAM R. WOODBURY, A. B., M. D.

Lecturer on Hygiene.

CHARLES D. KNOWLTON, M. D.

Demonstrator of Anatomy.

RICHARD M. PEARCE.

Demonstrator of Physiology.

FRED S. RADDIN, M. D.

Assistant in Surgery.

WILLIAM A. WHITE, M. D.

Lecturer on Diseases of Children.

Assistant in Theory and Practice of Medicine.

EDWARD E. THORPE, M. D.

Assistant in Medical Chemistry.

CHARLES L. CUTLER, M. D.

Assistant in Gynæcology.

FRANK B. BROWN, M. D.

Assistant in Pathology.

ALBERT E. ROGERS, M. D.

Assistant in Materia Medica.

Students.

Allen, Chandler Briggs	<i>Wellesley Hills.</i>
Anderson, Mabelle	<i>Haverhill.</i>
Avedisian, Avedis der	<i>Boston.</i>
Ayers, Seabury Rogers	<i>Boston.</i>
Bailey, William Howard	<i>Waltham.</i>
Barry, James Henry	<i>Charlestown.</i>
Blake, LeGrand	<i>Boston.</i>
Bonyman, Harry Evan	<i>Everett.</i>
Bourn, Cora Etta	<i>Providence, R. I.</i>
Bowker, Jane Howorth	<i>Brookline.</i>
Briggs, Lloyd Vernon	<i>Hanover.</i>
Brightman, Helen	<i>Acushnet.</i>
Butterworth, Mary Frances	<i>Revere.</i>
Cameron, Charles Robert	<i>Everett.</i>
Chadbourne, May	<i>Medford.</i>
Chaffee, Harry Smith	<i>Rochester, Vt.</i>
Chandler, Frederick Emerson	<i>Dorchester.</i>
Clark, James Colby Dorr	<i>Medford.</i>
Coffin, Harold Leroy	<i>Addison, Me.</i>
Cummings, William Sinnott	<i>West Stoughton.</i>
Davis, Stephen Rich	<i>Barre, Vt.</i>
Dean, Rosa, B. A.	<i>Medford.</i>
Dennis, Jane Louise	<i>Full River.</i>
Dunham, Henry Bristol, Ph. G.	<i>Watertown.</i>
Duval, Ida May	<i>Boston.</i>
Ebann, Charles Deletang	<i>Green Harbor.</i>
Faxon, Eudora Mead, M. D.	<i>Boston.</i>
Fleet, William Ernest, M. D.	<i>Cambridge.</i>
Fletcher, Rosa, M. D.	<i>Boston.</i>
Flynn, William Andrew	<i>Rockland.</i>
French, James Innes	<i>Woburn.</i>
Gage, George Asahel	<i>Boston.</i>
Garrison, Ambrose John, M. D.	<i>Franklin.</i>
Garrison, Jeff Cushing, M. D.	<i>Boston.</i>
Greene, Thomas Francis	<i>Roxbury.</i>
Greene, William Henry	<i>Roxbury.</i>
Grovestein, William Pride	<i>Cambridge.</i>

Holmes, Harry Clinton	<i>Chelsea.</i>
Hughes, Laura Ann Cleophas	<i>Boston.</i>
Hunt, George Eddy	<i>E. Constable, N. Y.</i>
Johnson, Henry Peyton	<i>Brookline.</i>
Johnstone, William Joseph	<i>Boston.</i>
Kelleher, Patrick Francis	<i>Cambridge.</i>
Kinney, Eunice Draper, M. D. . . .	<i>Boston.</i>
Knowlton, Charles Davison, M. D. . . .	<i>Boston.</i>
Leavitt, Edward Alden	<i>Auburn, Me.</i>
Leavitt, George Albert	<i>Boston.</i>
Mahoney, Frank Augustus	<i>South Boston.</i>
Mann, Gordon	<i>Rockland.</i>
McNamara, Eugene Thomas	<i>Camden, Me.</i>
Meigs, Jonathan Harding	<i>Beachmont.</i>
Moir, Archibald Campbell Milton	<i>Cambridge.</i>
Morse, Frederick Otis	<i>Charlestown.</i>
Palmer, Alice Elizabeth	<i>Batavia, N. Y.</i>
Patch, Annie S. Kenney	<i>Farmington, N. H.</i>
Patrick, Thomas William	<i>Trinidad, West Indies.</i>
Patterson, William Francis	<i>E. Somerville.</i>
Pearce, Richard Mills	<i>Boston.</i>
Pillsbury, Ernest Dean	<i>Somerville.</i>
Plumer, Luther Boutelle, B. D. . . .	<i>Somerville.</i>
Pond, Eleanor Dorcas, A. B. . . .	<i>Medway.</i>
Putnam, Charles Willis	<i>Peabody.</i>
Rabinovich, Helen	<i>New York City, N. Y.</i>
Reed, Asa Pingree	<i>South Bridgton, Me.</i>
Rice, Walter Henry	<i>Waltham.</i>
Robinson, Fred Hilliard	<i>Manchester, N. H.</i>
Roy, James McDonald, M. D. . . .	<i>Somerville.</i>
Ryan, John Francis	<i>Brookline.</i>
Scoboria, Peter Gilmore	<i>Chelmsford.</i>
Smith, Annie Manson, B. S. . . .	<i>Bedford.</i>
Smith, Mary Euphrasia	<i>Valley Falls, R. I.</i>
Steele, Howard Russell	<i>Northampton.</i>
Stevens, Sarah Elmina	<i>Roxbury.</i>
Stone, Ella Gertrude	<i>Lawrence.</i>
Thorpe, Edward Eliphalet, M. D. . . .	<i>Newton Centre.</i>
Walker, William	<i>Roxbury.</i>
Whipple, Albert Lawrence	<i>Hamilton.</i>
White, William Allen, M. D. . . .	<i>Boston.</i>
Wright, Jennie Mary	<i>New Haven, Conn.</i>
Wylie, Ella Rosalind	<i>Boston.</i>

The Medical School.

After mature deliberation the Trustees decided to enlarge the departments of the college by the establishment of a medical school. This action was not taken until late in the month of August. Notwithstanding this fact, the number of students presenting themselves for enrolment at the opening of the term is evidence of the need of such a school; namely, a school of the regular order, in which the charges are moderate, at an educational centre, like Boston, where the clinical advantages are superior to those of most New England medical schools, and where no distinction is made on account of sex.

Owing to the financial depression, the step was taken not without misgiving. But the results already attained seem to justify the movement. In the brief time at the disposal of the authorities it was impossible to obtain quarters for the school that were altogether satisfactory. But measures will be taken at once to improve the facilities. The hearty endorsement the undertaking has received from leading members of the medical profession in this part of the country is very encouraging. The public can rest assured that no pains will be spared to equip the school so that the instruction shall be thorough, complete, and practical. As soon as new arrangements are made notice will be given by an announcement. It is expected that the announcement will be ready during the month of May, 1894. It will be forwarded on application to the Secretary of the Medical Faculty.

Course of Study.

This consists of a three-years graded course of didactic and clinical lectures and recitations upon the different subjects of medical science, illustrated by charts, plates, drawings, and dissections. These will be supplemented by individual work in the laboratories and dissecting-room, thus requiring the student to become familiar with the various phenomena met with in practice.

FRESHMAN CLASS.

Anatomy.—Lectures and demonstrations with the cadaver. Gray is used as a text-book, with references to Quain, Holden, Darling, and Ranney. *Three hours a week.* PROFESSOR THAYER.

Physiology.—Including Hygiene. Lectures, with the use of such texts as Landois and Sterling, Human Body, Martin (fifth edition), Dalton, Flint, and Kirk's Handbook (twelfth edition). *Two hours a week.* PROFESSOR NOTT, DR. WOODBURY.

Histology.—This subject is given by lectures with demonstrations, making free use of the microscope. *One hour a week.* PROFESSOR KINGSLEY.

General Chemistry.—The text-books used are Witthaus's (third edition), Hill's Qualitative Analysis, Cook's, the new Chemistry. Lectures are given by the instructor, and students are required to supplement the instruction by laboratory practice. *Three hours a week.* DR. PITKIN.

MIDDLE CLASS.

Pathology.—The subject treated by lectures, with illustrations and references to such texts as Greene, Billroth, and Zeigler. *Three hours a week.* PROFESSOR DUDLEY, DR. GALLISON.

Materia Medica and Therapeutics.—Didactic lectures and recitations, with practice in writing prescriptions. The texts used are Hare, Wood, Bartholow, Mann's Prescription Writing, and United States Dispensary. *Two hours a week.*

PROFESSOR WHEATLEY.

Medical Chemistry.—Toxicology; Detection of Poisons; Analysis of Urine. Lectures and laboratory. *Two hours a week.*

DR. AUSTIN.

SENIOR CLASS.

Obstetrics.—Lectures with illustrations, by plates and manikins. Text-books, Lusk, Playfair, Cazeaux, and Winckle. *Three hours a week for the first term.* PROFESSOR JOHNSON.

Gynæcology.—Lectures and recitations, with frequent demonstrations by operations. The texts followed are Thomas, Emmet, and Munde. *Three hours a week for the second term.*

PROFESSOR JOHNSON.

Surgery.—Lectures and illustrations with the cadaver of the principal surgical operations. Students are referred to such writers as Bryant, Treeves, Ashurst, and Wyeth. *Two hours a week.*

PROFESSOR CHIPMAN.

Theory and Practice of Medicine.—Lectures. *Two hours a week for the first term, and one lecture and one clinic each week for the second term.*

PROFESSOR HALL.

Ophthalmology and Otology.—Students are required to attend practical instruction in diseases of the eye and ear. *One hour a week.*

DR. TENNEY.

Medical Jurisprudence.—The subject of jurisprudence, so far as it has interest for the medical practitioner, is fully covered. *Lectures one hour a week for the first term.*

DR. DURELL.

Neurology.—The subject is given by lectures, with opportunities for clinical study. *One hour a week for the second term.*

DR. WEBBER.

Laryngology.—Students are required to attend practical instruction in diseases of the nose and throat. Lectures and clinics. *One hour a week for the first term.*

DR. EAMES.

Genito-Urinary Surgery.—Lectures, with operations and demonstrations. *One hour a week.*

DR. GALLISON.

Departments of Instruction.

Anatomy.—The course in Anatomy consists of lectures and demonstrations illustrated by plates, models, and dissections. Especial attention is devoted to Surgical Anatomy, and the relations of parts and organs in the various regions of the body are referred to, and their importance in the operations emphasized and explained. In the dissecting-room the student is required to carry on his work with neatness and precision, under the supervision of the demonstrator, thus acquiring that familiarity with the use of instruments which is so essential to the practitioner.

The new dissecting-room is fitted with all modern conveniences, and is under the personal supervision of the Professor of Anatomy. The dissections are made under the direction of Dr. Knowlton, Demonstrator of Anatomy, who will assign the parts to students and give all necessary directions and advice. During the lectures upon Osteology students will be allowed to take specimens of bones for study at their homes.

Physiology.—This branch is taught by means of didactic lectures, frequent quizzing, and, so far as practicable, demonstrations upon the lower animals. Cellular Physiology, holding as it does a high and important position, will be taught in its modern acceptance.

Physiology being naturally divided into several departments will be considered in its relations to Anatomy, Chemistry, Histology, and Pathology. Especial attention will be given to the nervous system, digestion, absorption, secretion, the blood and its circulation. The student can thus study the phenomena which the human body exhibits in every department of its vital operations.

General Chemistry.—This course consists of Descriptive Chemistry and Qualitative Analysis, and so much of Theoreti-

cal Chemistry as is necessary for a proper understanding of the subject. The instruction is by lectures, recitations, and practical work at individual desks in the laboratory by the students. The aim is to impart such general knowledge of the subject as is necessary to the intelligent physician. At the same time any who may wish to pursue the study further than is required of every graduate may do so by special arrangement.

Medical Chemistry. — Recognizing fully the steadily increasing importance attached to urinary analysis as a means of diagnosis in disease, increased facilities will this year be offered for practical work. Pathological urine for analysis is procured daily from one of the large hospitals of Boston, and each student is required to examine a certain number of specimens and present a written report of analysis of same, including the probable diagnosis. In addition, a short course will be given on the practical examination of poisons.

Pathology. — Instruction in this department will consist of lectures, quizzes, and recitations. It will be the aim to impress upon the student the importance of a thorough knowledge of the cause, career, and termination of pathological processes, giving frequent illustrations by morbid specimens.

Bacteriology will occupy an important place in the course, and will receive the attention its increasing developments and interest demand.

Materia Medica and Therapeutics. — The instruction in this department will consist of didactic lectures and recitations. Special attention will be given to the physiological action and therapeutical use of drugs, combined with practical exercise in the construction and writing of prescriptions. Recent additions to the Materia Medica will be shown and their action described. Instruction will be given in the metric system of weights and measures.

Surgery. — Two lectures will be given each week, and the principal surgical operations will be performed and carefully demonstrated upon the cadaver before the class. Special courses

will be given in genito-urinary, orthopædic and regional surgery. Minor surgery, bandaging, application of splints and surgical dressings will be carefully and thoroughly taught.

Theory and Practice and Clinical Medicine. — There will be two lectures given each week during the first half of the year, and one lecture and one medical clinic weekly during the last half. Two recitations will be held each week during the whole year. Preventive medicine and hygiene, from their rapidly increasing importance in the practical work of the physician, will be thoroughly considered.

Obstetrics and Gynæcology. — Under this head the instruction in Obstetrics will consist of lectures illustrated by plates and manikins, with recitations, three times a week. Especial stress is put upon diagnosis, the mechanism of labor, and care during convalescence. So far as possible, the various operations will be demonstrated upon the cadaver. Cases of Obstetrics are furnished students when possible.

In Gynæcology the instruction will consist of lectures and recitations during the second half of the term, with a demonstration of as many of the operations as may be feasible.

Special Instruction. — In addition to the subjects of instruction already mentioned there will be given during the course lectures, both didactic and clinical, upon special subjects of importance to the practitioner. These lectures are of great interest, especially in connection with the college dispensary, from which a large amount of clinical material is obtained.

Ophthalmology and Otology. — It is the aim of this course to prepare the student to treat such cases of disease of the eye and ear as he will be likely to meet in general practice. The lectures will be fully illustrated by drawings and apparatus, and especial attention will be paid to teaching the student how to best examine the organs and become familiar with the ophthalmoscope and otoscope. The college dispensary will be used and students will be able to see a greater variety of diseases of the eye and ear than they will be likely to meet with in general practice.

Diseases of Children.—This course will consist of a thorough instruction in the many diseases incident to childhood, with special stress upon their early diagnosis. The various eruptive diseases will be considered, illustrated either by plates or cases occurring in dispensary work.

Clinical Advantages.—The facilities offered by this College for clinical observations and study are continually increasing. Besides the dispensary directly under the control of the Faculty, it is contemplated, at no distant day, to open an additional one in the college building. Besides these the great hospitals of Boston afford ample opportunity for witnessing important surgical operations.

EXAMINATIONS.

Examinations are both oral and written. The oral take place each week of the session; the written are held at the close of the session in the college building, and are as follows:—

First Year: Anatomy, including Histology, Physiology, including Hygiene, General Chemistry.

Second Year: Materia Medica and Therapeutics, Medical Chemistry and Toxicology and Pathology.

Third Year: Surgery, including the Eye and Ear, Practice, including Diseases of Children, Obstetrics, including Gynæcology.

Requirements.

FOR ADMISSION.

All students will have to pass an entrance examination consisting of —

(1) A composition written in English, of not less than two hundred words.

(2) The translation of easy Latin prose, or showing a satisfactory knowledge of the derivation of medical terms, and medical and pharmaceutical terminology.

(3) An examination in higher Arithmetic.

(4) An examination in elementary Physics, including Heat, Light, and Electricity.

Students who may fail in any of these examinations may be enrolled as conditioned, and will be required to make up the deficiency during the session, before they can be enrolled as students in regular standing.

EXCEPTIONS: Such entrance examinations will not be required of students who have matriculated in a regular medical school requiring a similar examination; nor of students who have passed the entrance examination required by the Regents of the State of New York, or similar constituted authority in other States; nor of students, matriculates, or graduates of reputable colleges of Literature, Science, and the Arts, or graduates of high schools of the first grade, or of State normal schools.

FOR GRADUATION.

Candidates must be twenty-one years of age, of good moral character.

They must have attended three full courses of medical lectures of not less than six months' duration each, the last at this College, no two courses to have been taken in the same year.

They must present evidence of having dissected under the direction of a Demonstrator of Anatomy.

They must satisfactorily pass all the required examinations.

These requirements are substantially like those established by the American Association of Medical Colleges of the United States, and do not apply to students who matriculated prior to July 1, 1892. They will be strictly enforced at this institution.

General Information.

SESSIONS OF THE SCHOOL.

The annual course of lectures commences on the first Wednesday in October of each year, and continues until the first Wednesday in May.

The Christmas vacation (of a week) divides the course into two sessions.

There are no exercises at the school during this vacation, nor upon Thanksgiving Day, or Fast Day.

The course for 1894-95 will commence on Wednesday, Oct. 3, 1894, and continue until Wednesday, May 1, 1895.

STANDING AND CERTIFICATES.

Graduates of other regular medical schools in good standing may receive the degree of this school after attending one course of lectures and passing the examinations of the Senior year. It is understood that attendance upon a course of lectures requires actual presence at a majority of the exercises of each session.

Persons who have studied medicine with a regular physician one or more years, or attended one full course of lectures at a recognized medical college, or students who have taken two full courses of lectures at any recognized medical college, may be admitted to the second or third year's course.

Students who do not wish a degree will be received for any portion of the course. Any student may obtain a certificate of his period of connection with the school.

EXPENSES.

First Year.						
Matriculation fee	.	.	.	.	.	\$5.00
Demonstrator fee	.	.	.	.	.	5.00
Laboratory fee	.	.	.	.	.	5.00
General lecture ticket	.	.	.	.	.	90.00

Second Year.

Matriculation fee	.	.	.	.	.	.	\$5.00
Laboratory fee	.	.	.	.	.	.	5.00
General lecture ticket	.	.	.	.	.	.	90.00

Third Year.

Matriculation fee	.	.	.	.	.	.	\$5.00
General lecture ticket	.	.	.	.	.	.	90.00
Graduation fee	.	.	.	.	.	.	30.00

Ticket admitting to the three years' lectures (when paid in advance)	.	.	.	.	.	.	\$250.00
Instruction in a single branch	.	.	.	.	.	.	40.00
Fee for graduate instruction	.	.	.	.	.	.	50.00
Dissecting material	.	.	.	.	.	.	At cost.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from \$4 to \$7 per week. Near the school building are several excellent and reasonable boarding places.

Students arriving in the city are invited to call upon the Secretary, at his office, No. 74 Boylston Street, where they will be given all necessary advice about boarding-places, and any assistance in the Secretary's power will be rendered.

Requests for the Annual Announcement and all other communications relating to the business of the school should be addressed to the Secretary, PROFESSOR CHARLES P. THAYER, M. D., 74 *Boylston Street, Boston, Mass.*

BROMFIELD-PEARSON SCHOOL.

(TECHNICAL.)

Bromfield-Pearson School.

BOARD OF INSTRUCTION.

ELMER H. CAPEN, D. D., PRESIDENT.

GARDNER C. ANTHONY, A. M., DEAN,
And Professor of Technical Drawing.

FRANK T. DANIELS, A. M. B.
Instructor in Drawing.

WILLIAM H. DETWYLER, PH. B.
Tutor in French.

GEORGE H. FURBISH.
Teacher of Woodwork and Foundry Work.

FRANK G. WREN.
Tutor in Mathematics.

Teacher of Forging.

STUDENTS.

Battey, Benjamin A.	Providence, R. I.
Fletcher, David Thurston	Whitinsville, Mass.
Kimball, Frederick E.	Providence, R. I.
Larkin, Frank Provost	Westerly, R. I.
Massie, Walter W.	Providence, R. I.
Merritt, Henry D.	North Attleboro, Mass.
Norris, Charles Henry	New Britain, Conn.
Richardson, Ernest Stanley	Danvers, Mass.
Savage, J. Arthur	West Somerville, Mass.
Smith, Edwin Newton	West Somerville, Mass.
Sweet, Morton Sumner	North Uxbridge, Mass.
Ward, George Allen	Barre, Vt.
Weatherwax, Bion W.	Aberdeen, Washington.
Williams, Walter E.	Edgewood, R. I.

Courses of Study.

Two courses are open to students of this school: a preparatory course of one year for such as may be qualified by previous education and maturity of mind to fit for either of the Engineering Courses of Tufts College in one year; and a special course in Engineering for those who may devote but two years to their studies, and desire a scientific course which, though very brief, shall be thorough and complete in itself.

THE PREPARATORY COURSE.

First Quarter.

Academic Algebra. *Six hours a week.*

French. *Five hours a week.*

English. *Two hours a week.*

Freehand Drawing. *One hour a week.*

Mechanical Drawing. *Elective.*

Second Quarter.

Academic Algebra. *Three hours a week.*

Plane Geometry. *Three hours a week.*

French. *Five hours a week.*

English. *Two hours a week.*

Freehand Drawing. *One hour a week.*

Mechanical Drawing. *Elective.*

Third Quarter.

Academic Algebra. *Three hours a week.*

Plane Geometry. *Three hours a week.*

French. *Five hours a week.*

English. *Two hours a week.*

Mechanical Drawing. *Three hours a week.*

Fourth Quarter.

Solid Geometry. *Four hours a week.*

Arithmetic. *Two hours a week.*

French. *Five hours a week.*

English. *Two hours a week.*

Mechanical Drawing or Trigonometry. *Three hours a week.*

SPECIAL ENGINEERING COURSE.

This course is designed to provide a special training in Mathematics, Mechanics, and Drawing for those whose time may be limited to two years, and whose previous education is insufficient to enable them to enter the College. It is especially intended for those who, having a full appreciation of the necessity for such an education, may devote all of the allotted time to faithful service in study and investigation. Much of the work being individual, the student is free to pursue his studies as rapidly as his own ability may permit. It is not the object of the school to produce expert engineers or skilled draughtsmen, but to give such direction to the thought and afford such training in theory and practice as is requisite to every successful engineer.

FIRST YEAR.

First Quarter.

Academic Algebra. *Six hours a week.*
Freehand Drawing. *One hour a week.*
Mechanical Drawing. *Eight hours a week.*
French and English. *Elective.*

Second Quarter.

Academic Algebra. *Three hours a week.*
Plane Geometry. *Three hours a week.*
Freehand Drawing. *One hour a week.*
Mechanical Drawing. *Eight hours a week.*
French and English. *Elective.*

Third Quarter.

Academic Algebra. *Three hours a week.*
Plane Geometry. *Three hours a week.*
Mechanics. *Two hours a week.*
Drawing of Gears, Cams, etc. *Eight hours a week.*
French and English. *Elective.*

Fourth Quarter.

Solid Geometry. *Four hours a week.*
Trigonometry. *Three hours a week.*
Mechanics. *Two hours a week.*
Machine Drawing. *Eight hours a week.*
French and English. *Elective.*

SECOND YEAR.

First Quarter.

Advanced Algebra, Spherical Geometry. *Six hours a week.*

Descriptive Geometry. *Three hours a week.*

Machine Drawing. *Six hours a week.*

Shop Work. *Elective.*

Second Quarter.

Advanced Algebra. *Three hours a week.*

Analytic Geometry. *Three hours a week.*

Applied Mechanics. *Three hours a week.*

Machine Design. *Six hours a week.*

Shop Work. *Elective.*

Third Quarter.

Analytic Geometry, Differential Calculus. *Three hours a week.*

Applied Mechanics. *Three hours a week.*

Steam Engine. *Four hours a week.*

Boiler and Steam Engine Detail Drawing. *Six hours a week.*

Shop Work. *Elective.*

Fourth Quarter.

Differential and Integral Calculus. *Four hours a week.*

Steam Engine. *Four hours a week.*

Design for Special Machine. *Eight hours a week.*

General Information.

REQUIREMENTS FOR ADMISSION.

Students will be required to satisfy the instructor in charge of their ability to pursue the studies which they may elect. This may be done by certificate from school previously attended, or by examination, oral or written, as may be deemed necessary.

In this matter of examination, either for entrance or for advanced standing, the students are considered individually, rather than collectively, in order to give the instructor the fullest knowledge of the standing of the student, and enable the latter to take such a place in the school as shall best fit him for his future work.

CERTIFICATES.

Certificates of proficiency are given the special engineering students who shall complete either of the courses comprised in one year. These certificates state what subjects have been completed according to the requirements of the institution. No diploma is given or degree conferred.

TUITION.

Tuition is \$30 per quarter, payable in advance, and no part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

Full information concerning the courses and other matters pertaining to the school may be obtained on application to GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, *Tufts College, Mass.*

DEGREES CONFERRED AT THE THIRTY-SEVENTH ANNUAL COMMENCEMENT, JUNE 21, 1893.

Honorary Degrees.

A. M.

CHARLES JEPHTHA HILL WOODBURY.

D. D.

ARTHUR GUINNESS ROGERS, A.M.

Degrees in Course.

A. M.

GEORGE ALLEN ARNOLD, PH. B., 1892.

WILLIAM KENDALL DENISON, A. B., 1891.

FRANKLIN KENT GIFFORD, A. B. (Harvard, 1884), B. D., 1893.

CHARLES HENRY PATTERSON, A. B., 1887.

HENRY BEECHER STONE, PH. B., 1886.

HIRAM AUSTIN TUTTLE, A. B., 1891.

C. E.

ALFRED WARREN KENNEDY, A. M. B., 1892.

A. B.

HENRIETTA NOBLE BROWN.

WALDO LINCOLN COOK.

JOSEPH BYRON GROCE.

WILLARD SHEPARD MARTIN.

HARRIS WALDEMAR SPAULDING.

ALFRED PERCIVAL THOMPSON.

FREDERICK CUSHMAN WATSON.

Ph. B.

LOUIS WALES ARNOLD.

ARTHUR WINFIELD DEGOOSH.

B. C. E.

CHARLES RICE GOW.

HENRY ALLEN PEAKES.

GEORGE EDWARD STRONG.

B. E. E.

GEORGE MOULTON BATES.
 HARRY GRAY CHASE.
 CLINTON EMERSON DOLBEAR.
 JOHN ALDEN NEAL.
 HARRY ORMAN ROBINSON.
 WILFRED WESLEY RUSS.
 STILLMAN SHAW.
 HOWARD HANCHETT WESTON.

B. D.

FRANKLIN KENT GIFFORD.
 HOWARD ANTHONY MARKLEY.
 HARLEY DAVIDSON MAXWELL.

HONORS AWARDED AT THE THIRTY-SEVENTH ANNUAL COMMENCEMENT.

Modern Languages.

LOUIS WALES ARNOLD.

Second Year Honors in Greek.

HARRY CHARLES FOLSOM.

AWARDS OF PRIZES, 1892-93.

Goddard Prize in Mathematics.

PERCIVAL GATES BARNARD, of the Freshman Class.

Greenwood Prize Scholarship in Oratory.

WILLARD STANTON SMALL, of the Junior Class.

Rhetorical Prizes.

THOMAS WHITTEMORE and HERBERT ELMON BENTON, of the Junior Class; WILLIAM ROGER DUNHAM and CHARLES DOW CLARK, of the Sophomore Class.

Greenwood Prizes in Oratory in the Divinity School.

FREDERIC WILLIAM PERKINS, ARTHUR WILDER GROSE, and LESLIE MOORE.

Perkins Prizes for Extemporaneous Preaching in the Divinity School.

FRANKLIN KENT GIFFORD and LESLIE MOORE.

Entrance Examination Prize, 1893-94.

LEM GALE BLANCHARD.



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